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PACIFIC FISHERMAN

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International North Pacific Fisheries Commission in its 7th annual conference, Vancouver, B.C., November, 1960. Reading around the table from the left: United States Section—John H. Clawson, Milton E. Brodhag, Edward W. Allen, Antti J. Suomela; Canadian Section—James C. Cameron, Roger T. Hager, George R. Clark, John M. Buchanan; Japanese Section—Kenjiro Nishamura, Iwao Fujita, Kenkichi Nakabe. Identifiable at the extreme left rear: Clarence L. Anderson, Robert C. Kalleberg and Harold E. Lokken, U.S. advisors.

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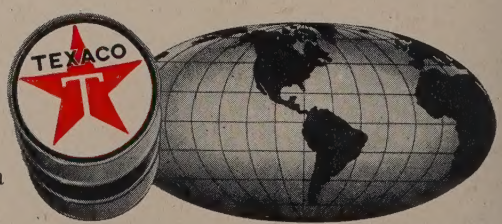

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PACIFIC FISHERMAN

Our Fifty-Eighth Year— **DECEMBER 1960**
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WANTED: A Man of Experience

● With unanimity rare in the fishing industry, its Pacific members are pressing the United States Departments of Interior and State to fill the now-vacant post of fishery attache' in the U.S. embassy in Tokyo with a mature, qualified, experienced officer.

They have no specific candidate, but feel the position is so important to the industry and the maintenance of harmonious relations with Asian nations in fishery matters that they are demanding the attache' have:

1. A background of experience in the Far East, standing and respect in Japan.

2. Contact with an understanding of the U. S. Pacific Fishing industry of the United States.

3. Knowledge and understanding of the basic problems of international fisheries in the North Pacific.

● The fishing industry plainly feels the Department of the Interior is not ascribing to the office of the Tokyo attache' the importance to which it is realistically entitled.

Under Wilvan G. Van Campen, with his remarkable linguistic ability and knowledge of the Orient, the office rendered service and attained stature which the industry feels *must* be maintained.

In taking this strong stand in opposition to the Department of the Interior's apparent program, the fishing industry is facing-up squarely to the Fish and Wildlife Service, the agency of the national government created to serve it through its B.C.F.

● Thus far at least the active protest has been heard only from the Pacific Coast, but inquiry on the other coasts of the United States shows solid backing for the Pacific position.

From Alaska to Southern California fishery organizations representative of all elements of industrial fishing have challenged Interior. Fishermen's unions, vessel owners associations, packers and operators in November and December moved with a singleness of purpose unusual in the industry.

Early in December a spokesman for one of the most important segments of the American fisheries summed-up its feeling in these blunt words:

● "The post of Tokyo fishery attache' is too important to the American fisheries, and actually to the American people as a whole, to be sacrificed in a bureaucratic budget shuffle."

"The industry is *unanimous* on that."

Edward Cunningham, Merchant

● Edward Cunningham, dean of Pacific fisheries suppliers, founder and for 60 years head of Pacific Marine Supply Co., died Nov. 29 on a train en route from Seattle to California. He was 82.

A book could be written about Edward Cunningham, who in 1897 founded the business through which he served the fisheries and maritime world of the Pacific, but no fuller, more earnest tribute could be paid him than that of the scroll which the canned salmon industry presented to him in 1957, honoring his 60 years of service."

The words written then serve still as expressing the industry's measure of the man. They are:

● *Edward Cunningham, Merchant, for 60 years served the fisheries of the Pacific Northwest and Alaska in the vital role of supplier, in keeping with the highest, proudest traditions of American business.*

We, his customers, count him also as a friend, and acknowledge before all men the obligation of our industry to his foresight, judgment, honesty, patience, trust, and loyalty. As a businessman, he sold goods; but he gave of himself, his mind, and his sympathetic understanding.

Here is a merchant whose richest profit is in the grateful respect of the fishing industry he has supplied and served for 60 years.

marine diesels
BY CATERPILLAR

"WHEN YOU ASK YOUR FRIENDS ABOUT ENGINES . . . YOU GET STRAIGHT ANSWERS"

This statement by owner-skipper Chris Brugger of the *Nina B* out of Seattle, Washington, was the result of careful engine evaluation. Asked what engine he would buy if he needed another, he answered, "I'd buy a Cat. I make a point before buying an engine to check completely with other owners in the fishing fleet having Caterpillar Engines in their boats. Actually, I took a long time at it; I made a thorough check. I came to the conclusion that Caterpillar was *the* engine for the *Nina B*. When you ask your friends, you get straight answers. When you buy a Caterpillar Diesel for your boat, you believe you are buying the best there is. It's a rugged engine, the kind of engine fishermen need."

After the Caterpillar D342 was installed, the 65-foot *Nina B* logged 10.4 knots at 1225 engine RPM in speed trials, an increase of 2.4 knots compared with her old engine. Captain Brugger also believes that the *Nina B's* 75,000 pounds of iced fish capacity can be increased 5,000 pounds because of the lightness of the more compact Caterpillar Engine.

Today's Cat Marine Diesels with aftercooling and turbocharging give you plenty of compact power and minimum weight. Your Caterpillar Dealer can show you how low the price per horsepower is.

He can also show you how you can get more economy and fishing time for a fraction of the cost of a new vessel. Get in touch with him soon.

Owner-skipper Chris Brugger of Seattle, Washington, said, after the new Caterpillar Engine was installed, "I am well pleased with the *Nina B's* speed trials when she logged 10.4 knots in light condition."

MARINE POWER BY CATERPILLAR

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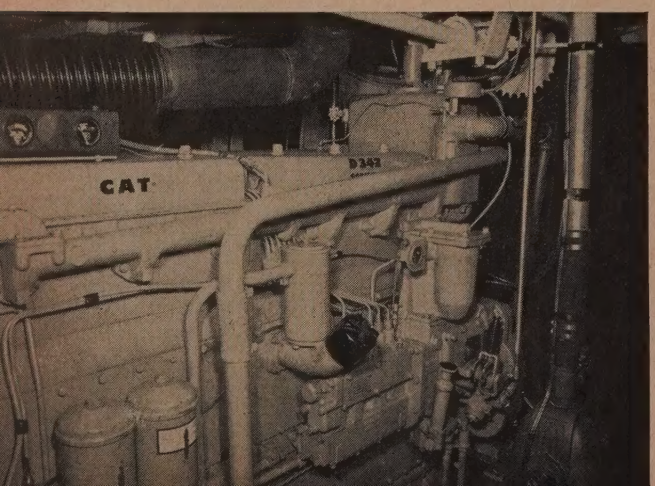
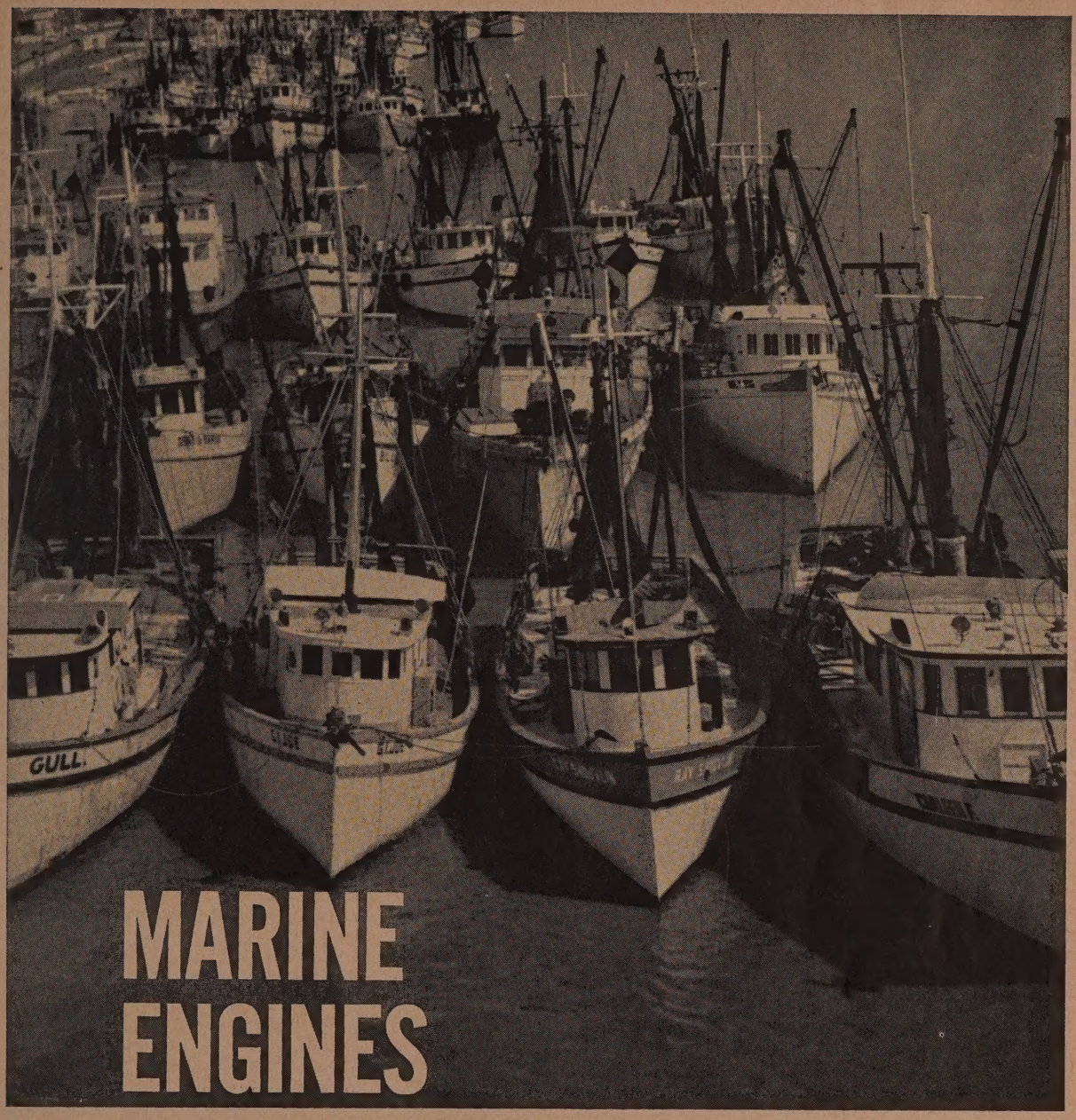
The Cat D342 in the engine room of the *Nina B* maintains high continuous speeds at 1225 RPM and assures effortless starting in all kinds of weather.



The *Nina B* ranges from Cape Flattery, Washington, to as far north as Rose Split, British Columbia. She carries four men, including the skipper, as crew.



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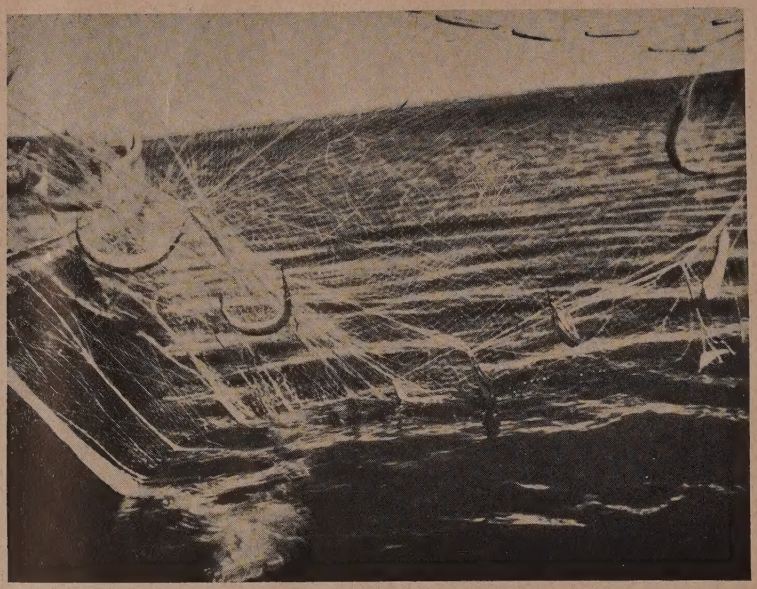

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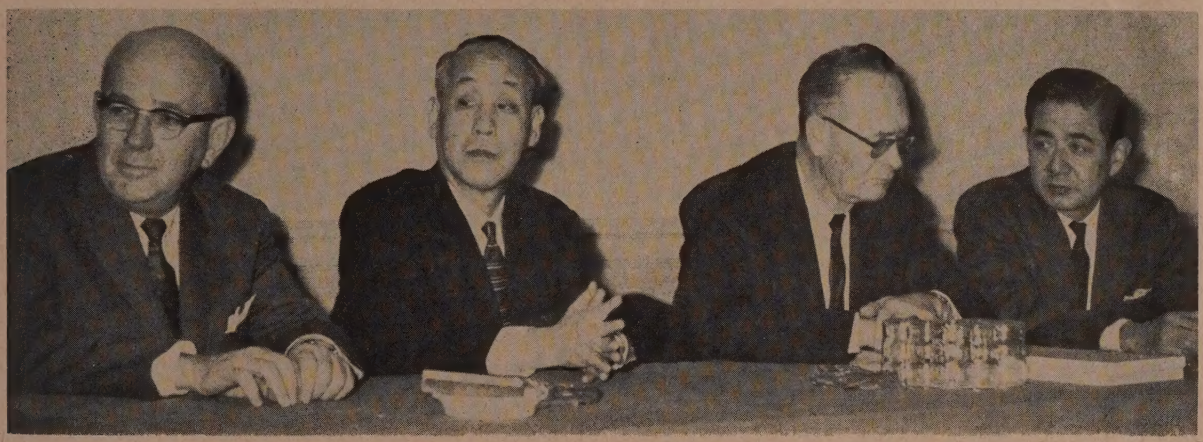
PACIFIC FISHERMAN December, 1960



Top Brass of INPFC—From the left: Milton E. Brooding, U.S. section chairman; Iwao Fujita, spokesman for Japan and new chairman of the commission; George R. Clark, Canada, retiring chairman; Kenjiro Nishamura, chief, Japan Fishery Agency.

WHICH WAY TOMORROW?

In the North Pacific's International Fisheries

● THINGS TO COME in the North Pacific fisheries in the Mid-Sixties began to take form at the seventh annual meeting of the International North Pacific Fisheries Commission at Vancouver, B.C., in November.

Three nations, parties to the North Pacific Treaty, talked about the future; a fourth "observed." About the green baize table were Canada, the United States and Japan.

Listening, and doubtless thinking, was the Union of Soviet Socialist Republics.

With its scientific and administrative preliminaries, the INPFC conference extended over a period of four weeks, and dealt with many subjects—all pertinent to the purposes of the North Pacific convention: "to promote and coordinate the scientific studies necessary to ascertain the conservation measures required to secure the maximum sustained productivity of fisheries of joint concern" and to "carry out such conservation measures" in the "common interest of Mankind."

The scientific accomplishments reported upon at Vancouver were prodigious; and the degree of scientific agreement in the conclusions drawn from them established a new degree of consensus.

From the political point of view—call it "diplomatic" or "administrative" if you will—these broad conclusions seemed to emerge:

● 1. *Provisional Salmon Abstention Line.* No shift in its position at 175° West Longitude can be expected in the immediate future; and certainly not until the three governments have responded to the INPFC 1959 request for an agreed-upon interpretation of the *meaning* of the treaty with respect to the basis on which the dividing line shall be drawn.

American Advisors at the INPFC meeting in Vancouver. In the front group of four: W. C. Herrington, C. E. Atkinson, J. L. McHugh, W. M. Terry. Next behind them: C. J. Burner, Charles R. Cary, H. E. Lokken. Across the back of the picture: Milo Moore, George Johansen, Robert I. Martin, S. J. Hutchinson, R. C. Kallenberg and R. J. Tepper.

● 2. *Qualifications for Abstention* have become the focal point of the commission's consideration. This concerns stocks of salmon, halibut and Canadian herring, from fishing which Japan abstains. While Canada and the United States maintained full continuance of the abstention qualifications of these stocks had been demonstrated, the Japanese took the opposite view. Lacking unanimity, the commission made no change in the abstention pattern.

● 3. *Fishing Pressure.* Expectation is that it will continue at about the same intensity, and in about the same areas, as in the recent past. George R. Clark of Canada, chairman of the commission in 1960, expressed the point in these words in his opening address: "While awaiting an agreed interpretation of the Protocol to the Convention, each country must conduct fishing operations by its nationals in a prudent manner and with specific regard to the conservation needs of each of the major units of the salmon stocks involved."

In his closing address, Milton E. Brooding, spokesman for the American Section, had this to say on the matter: "We feel it is in keeping with the spirit and intent of the convention, and in the interest of true conservation that Japan in her high seas salmon fishing operations exercise utmost restraint in the crucial area west of the Provisional Line."

● 4. *Future of the Treaty.* This subject shared with Abstention the primary interest of the Vancouver meeting. Generally speaking, opinion seemed to be quite uniform that the next few years will see changes. No official statement of the United States' position on this was voiced, but an observation by one of the American Section's advisors fairly expressed the consensus:

"While change can be expected in the existing convention, we believe a North Pacific fisheries conservation treaty, in one form or another, will be in effect for a long time to come."

● *Canadian view* on the future of the treaty was firmly expressed by no less an authority than Hon. J. Angus MacLean, Minister of Fisheries of Canada, in an address before the opening session of the conference when he said: "Canada's view is that the convention is a good one for the general benefit of the three countries. . . . The present convention is a workable instrument for the mutual benefit of the partnership. . . . The present convention has only a few years to run before it could be terminated by any one of the three countries. It is Canada's earnest hope that the convention will continue because we believe sincerely that international cooperation, based on mutual interest and respect, is essential not only in matters pertaining to fisheries, but in all fields affecting the community of nations."

● *Japan's attitude* with respect to the future of the treaty was perhaps most plainly referred to by Kenkichi Nakabe, spokesman for the Japanese Section at the opening of the conference, when he made these remarks: "Perpetual prosperity of the fishing industry cannot be fully accomplished through the efforts of any one country, due to the special nature of the resource, and depends rather upon the close international cooperation of the nations concerned. That is the very reason why Canada, Japan and the United States concluded the International North Pacific Fisheries Convention and have been endeavoring in concert to attain the rational utilization and conservation of the fishery resources of the North Pacific Ocean. . . . Should we try to get premature conclusions and fail to maintain the scientific approach, it would run counter to the spirit of the convention and might even jeopardize the authority of the commission." (These are the words of the official translation. Some of his hearers reflected that possibly the word "existence" might have been closer to the thought suggested than "authority").

● *What of the U.S.S.R.?* Boris G. Kulikov, the Russian observer at the conference of course was not answering such a question directly. However, his very stature in the

Soviet governmental organization is such that his assignment to the Vancouver duty was considered significant. He is Chief of the International Fisheries Section of the State Planning Committee of the Union of Soviet Socialist Republics. In the course of an address before an unofficial meeting in Vancouver he made some remarks which might be considered as referring to the *future* of international conservation in the North Pacific. Among such observations were:

"In developing our sea fisheries we should bear in mind both the interests of our country and the necessity of maintaining the rational utilization of marine resources with due consideration of the interests of other countries concerned.

"Our fishing industry people have no idea of developing sea fisheries other than in close cooperation with other countries in the field of rational exploitation of marine resources, such cooperation being duly based on the respect for each other's rights and interests. Successful expansion of sea fisheries requires much care about the future of the resources in the ocean. . . .

"The Soviet fishing industry is certainly interested in the expansion of fishing in the Pacific Ocean. We cannot separate our interests, however, from those of other countries, and are always ready to cooperate."

The Key Positions

● Key positions of the three signatory nations with respect to matters before the INPFC seventh conference were stated with clarity by their spokesmen.

For Japan, Mr. Nakabe, speaking at the opening plenary session emphasized:

"The obligation to abstain from fishing is the severest restrictive measure possible. The conditions for abstention specified in the convention should therefore be most strictly interpreted; and it must be further demonstrated on a scientific basis that these conditions have been met."

Iwao Fujita, who was elected chairman of the commission for 1961, elaborated the point in his closing address:

"The principle of abstention described in this treaty is unique as an international agreement for the conservation of marine resources. Hence, all countries which have interest in fisheries are watching closely the implementation of the abstention provisions. . . . Therefore, for the dignity of the treaty and because of the international circumstances under which we are working, the Japanese National Section believes that, in implementing the provisions of the treaty, the conditions for abstention should be interpreted most strictly, and adequately demonstrated by scientific evidence. . . .

"Japan has adhered to the obligation imposed by the treaty most faithfully, and shall continue to do so in the future.

"Japan is most deeply interested in the conservation of salmon stocks in the North Pacific and has imposed most strictly the domestic regulatory measures that have been considered necessary."

● *For Canada,* Roger T. Hager pointed particularly to the remarkable strides made in scientific investigations during 1960; and also the impending publication of a large number of the papers prepared by commission scientists, and particularly those touching on the sensitive subject of qualifications for abstention. He noted particularly that: "The combined efforts of the scientists of the three countries have made it possible to include in the reports a much fuller expression of agreed results than ever before."

He went on to point out that Canada stands in a special position in that it both prepares reports supporting continued qualification for abstention by Japan; and also examines critically the evidence submitted by the United States supporting the qualifications of the Bristol Bay salmon stocks, from which Canada abstains.

Although speaking basically for the commission as a whole, Chairman Clark summed-up the situation in these words, which were particularly expressive of the Canadian point of view:

"This commission continues to be the best and only organization for the solution of these problems. . . . I submit that it can only be concluded that the efforts of the commission will continue and that success will increase, resulting in benefits designed, as stated in part in the preamble of the convention, 'best to serve the common interest of mankind as well as the interests of the contracting parties.' "

● *For the United States,* Mr. Brooding called for reasonable interpretation of research results, saying "Progress in the evaluation and application of our scientific knowledge should not lag behind the progress we make in the accumulation of that knowledge . . . To require perfection in biological knowledge is unrealistic. Reasonableness in evaluating the existing facts is implicit in the very language of the convention."

In his concluding remarks Mr. Brooding said on the

International Caucus—with Edward W. Allen, U. S. Commissioner, left, in close conversation with Dr. A. W. H. Needler, director of the Pacific Biological Laboratory, Fisheries Research Board of Canada, Nanaimo, B. C.

subject of abstention: "Scientific evidence . . . makes it clear that salmon and halibut stocks of North American origin covered by the convention are being fully utilized, and that they continue to qualify for abstention. We feel this evidence is of such weight that this conclusion cannot reasonably be denied."

He pointed out also that 1960 had brought "among the scientists of all sections agreement that Red salmon of western Alaska origin predominate from the Alaska coast westward to 180°; and make up a large proportion of the Red salmon found in an area extending at least 10° further to the west.

"The wide measure of agreement reached by the scientists can leave no real doubt that these conclusions are justified."

Changes in Personnel

● Iwao Fujita of Japan was elected chairman of the International North Pacific Fisheries Commission, to serve through the next meeting, which will convene in Tokyo Nov. 6, 1961. Preliminary meetings of scientists and committees are scheduled for the period beginning Oct. 23 and running through the general conference, which is expected to terminate Nov. 11.

Edward W. Allen of the United States was elected vice chairman and George R. Clark of Canada secretary.

The Vancouver meeting of the commission saw two changes, with Kenkichi Nakabe and Yoshimitsu Ando commissioners on behalf of Japan.

The United States Section for the first time had a secretary, this being C. J. Burner, U.S. B.C.F. biologist and administrator, permanently serving the Section and coordinating the United States participation in North Pacific Treaty researches.

The Advisory Committee to the United States Section selected H. E. Lokken as its chairman. New members of this group included:

Charles B. Cary, executive director, California Fish Canners Association; H. B. Friele, president, Nakat Packing Corporation; A. E. Kemmerich, coordinator, Pacific Marine Fisheries Commission; R. W. Schoning, director, Oregon Department of Fisheries; Peter Tandstad, Cordova, Alaska, fisherman, who joined the committee early in the year, but was attending his first general conference.

22 Million-Fish Gross Run is 1961 Forecast for Bristol Bay

● Bristol Bay's Red salmon run of 1961 is forecast at 22 million salmon on the basis of analysis of the available data by the scientists of the three agencies closest to the picture.

This preliminary prediction was announced in mid-November by Clarence L. Anderson, commissioner of the Alaska Department of Fish and Game, as the studied opinion of the scientists of that agency, the U. S. Bureau of Commercial Fisheries, and the Fisheries Research Institute of the University of Washington. The Institute in 1960 predicted the run very closely.

● Several points regarding the 1961 run should be borne in mind in applying the forecast to preparations for the season.

1. The figure of 22 million fish is the gross population of mature fish expected to compose the run. It includes (a) fish which may be taken on the high seas by Japanese operations; (b) the necessary escapement to Bristol Bay streams for the maintenance of the resource on a sustained yield basis; (c) the allowable catch available to American fishermen.

2. The figure is subject to correction on the basis of later data and more thorough analysis of the information on hand.

3. Further evidence of the actual size of the run will be provided in the spring of 1961 by high seas fishing for sampling and tagging purposes. Alaska's proposed fishery regulations for 1961 are sufficiently flexible to permit adjustment to meet changes which may be suggested on the basis of such later data.

4. As a portion of the 1961 catch will be composed of 5-year fish from the same spawning that produced the big run of 1960 — which was composed primarily of 4-year fish — the average size of fish expected in 1961 should be larger than that in 1960.

● Parent stream distribution of the 1961 run is forecast approximately thus:

Nushagak	1,300,000
Naknek-Kvichak	15,000,000
Egegik	2,000,000+
Ugashik	3,000,000+

Weakness expected in the Nushagak run is reflected in the proposed Alaska fishery regulations for 1961, which impose severe restriction on the time-and-intensity provisions for that district, while liberalizing those for the areas to which more vigorous runs are expected.

Announcement of the forecast included the statement that:

"The Alaska Board of Fish and Game may now plan its regulations around these figures and the fishermen and processors may prepare their fishing and canning capacity to properly utilize the 1961 runs . . .

"The high seas sampling at sea by gillnets and seines which indicated the abundance of these fish in 1960 also gave clues as to the probable size of the fish in the 1961 run. Samples taken at sea showed a low abundance of one-year ocean fish (two year ocean in 1961) suggesting a heavy ocean mortality on those young red salmon which went to sea in the spring of 1959. The catches indicate the majority of the fish returning to Bristol Bay in 1961 will be large fish with three years of ocean life."

● *REMEMBER, the 22-million-fish forecast for Bristol Bay in 1960 is subject to reduction by the amount of the Japanese high seas catch of mature fish of Alaskan origin in the ocean fishery of that year.*

Tuna Fishing Normal Again, With Price-Quoting Variable

● San Pedro and San Diego tuna fleets were out fishing in normal style last month as the difference of opinion between canners and vessel owners on the price of fish seemed to have settled down into a sort of permanent stalemate.

The skippers are now delivering fish to the "major" canners on the basis of price letters issued by the canners at the time of sailing. The letters quote prices per species and size of fish, and guarantee to pay the listed prices when the vessel returns from its trip. There are several size-price splits, and higher prices per ton are paid for larger fish, except in the case of Bluefin, when the largest fish bring a lower price than those of a smaller but more usable size.

There was one change in this major-canner procedure last month when one of the Big Two offered skippers the choice of the established fixed-price guarantee letter or another deal under which the canner guaranteed to accept the fish at the going price as of the unloading date. At last reports, skippers were accepting this agreement, without a price guarantee, in preference to the guaranteed price.

The so-called "minor" canners continued either to buy US-caught fish at the old prices of $210 per ton of Skipjack and $250 for Yellowfin, or to use imported frozen tuna at the going prices.

Temporary for How Long?

● Everybody in the tuna business seems to feel that this method of selling fish is temporary, but it has been going on for nearly three months now.

The tuna statistics published by the Market News Service of the US Bureau of Commercial Fisheries show that the receipts of US-caught tuna for 1960 to date are almost exactly on a par with the figure for the same period of 1959—127,529 tons in 1960 as against 128,268 for last year. Both these totals are well below the 144,022 tons reported for 1958 to even date. Imports are down this year compared to last—59,190 for 1960 to date, 68,514 for 1959. The tonnage of fish caught by US-based purse seiners and clippers to date this year is well above last year's corresponding figure —105,579 tons in 1960, 101,090 last year. This last-quoted figure excludes transshipments.

Palatial New Cannery

● In San Diego, Breast-O'-Chicken Tuna put into operation its magnificent new cannery, moved to a new location on the waterfront from its old quarters.

Set up under the supervision of Bill Robinson of Breast-O'-Chicken, the new plant is a thoroughly modern, straight-line operation up-to-date from the unloading facilities at the B-O-C dock to the closing machines at the other end of the long, completely-rebuilt building. The plant includes a reduction plant for meal and oil production.

Record Pack for '60?

● This being that time of year, people in the tuna business are beginning to wonder what the total pack for 1960 will turn out to be.

According to the monthly case pack reports of the California Department of Fish and Game, the pack for the first nine months of 1960 was 8,450,370 cases of 24 halves or equivalent. Taking an average monthly pack and extending it to the end of 1960 (admittedly a purely armchair method of guessing) it looks as if the canners might wind up with a pack of around 11,300,000 cases. This would be a record-breaker, exceeding the 1958 record pack of 11,143,027 (Fish & Game figures). The 1959 case pack, as reported by Fish & Game, was 10,758,892.

Sardine Fishery Slumps Dismally in November

● Southern California's sardine fishery fell off to a trickle in November. Following the light-of-the-moon period, which extended from the first to the fifth, the biggest day's catch was 440 tons on the eighth.

Although the 1960 season in Southern California got off to a month's earlier start than 1959's, the total caught to November 17 inclusive, was only 3,000 tons more than last year's to date — 17,628 tons to 14,896. Neither figure was anywhere near the 64,939 tons received in the same period of 1958, when the sardine fishtry flashed into something like its former volume.

While the Southern California receipts were 3,000 tons better than last year, this advantage was more than counterbalanced by even lower deliveries to Monterey and San Francisco; so the total California receipts for the year to date were less by more than 2,000 tons than for the same period last year. The figures: 23,452 tons received to date in 1960; 25,600 to date in 1959.

The pack, too, was under last year's to date, with 539,400 cases (all styles) reported for 1960 to date as compared with 588,000 for the same period of 1959, and 1,871,000 for the same period of 1958.

The sardine boats were catching a little mackerel along with the sardines, and the mackerel fishery, while far from normal, was better so far this year than last. Market News Service reported catches of 44,198 tons for the year 1960 to November 15, as against 28,732 tons for the same period last year. Prices remained unchanged, at $35 a ton for both Jack and Pacific mackerel, and $25 for anchovies.

Central California Sardine Operations are Dismal

The November dark augered no better fishing for central California's sardine fishermen, now bringing practically all their catches in to Hueneme.

As the November dark opened only 5,594 tons of sardines had been processed by San Francisco and Monterey Bay plants, as compared to 9,307 tons in 1959, and 18,790 tons in 1958.

Only about 111,880 cases of fish had been packed in central California compared to 186,140 cases in 1959, and 375,800 cases in 1958.

Ovals were selling at $7.25-$7.50, and naturals, tall—$5.50-$5.75.

Washington and Alaska—Milo Moore, left, Washington Director of Fisheries, and **Lowell Wakefield,** president of Wakefield Fisheries, Port Wakefield, Alaska, intent on a problem related to King crab research at the Vancouver, B. C., meeting of the INPFC in November.

Alaskans Call for Step-Up In Research on King Crabs For Resource's Protection

● King crab resources of Alaskan coastal waters are giving serious concern to the industry and fishermen dependent upon them, as well as to the biologists engaged in tackling a research problem as thorny as the creatures with which it is concerned.

A. A. Owen, Alaska state senator whose district runs from Kodiak Island Westward more than 1,200 miles to Attu, embracing most of the area where Alaskans derive important livelihood from King crab, is particularly interested in increasing the studies of the biology and population density of the crab resource. As a member of the Advisory Committee to the American Section of the International North Pacific Fisheries Commission, Mr. Owen actively espoused expanded biological research before the resource is impaired.

In this he was joined actively by another Alaskan and Advisory Committee member, Lowell Wakefield, head of Wakefield Fisheries, Inc., largest operator in the industry, with two floating King crab plants and shore stations at Port Wakefield, Seldovia and Sand Point.

They are manifesting real concern lest the Bering Sea stocks of King crab be depleted under the fishing pressure of the increased operations mounted in 1960 when the Japanese doubled their fishing effort after a number of years of maintaining only a single expedition there and when the Russians also entered the King crab fishery with an operation opproaching that of the larger Japanese effort.

The King crab fishery of the central Alaska coast in recent years has come to contribute most importantly to the economy of the area and the Alaska Advisors were not slow to express concern lest failure to mount adequate research programs in the King crab fishery south of the Aleutian Islands, the Alaska Peninsula, and in the vicinity of Kodiak Island should leave that area vulnerable to fisheries by other nations.

● American research on King crab has been limited in the past almost wholly to work for the American Section of the International North Pacific Fisheries Commission on the stocks under exploitation in southern Bering Sea by Americans and Japanese, with a Soviet operation entering the field in 1960.

Research work in the vicinity of Kodiak Island was undertaken recently by the Alaska Department of Fisheries, and it hoped this may be expanded in coastal waters; and supplemented outside territorial waters in Alaska Peninsula and Kodiak waters by the U. S. Bureau of Commercial Fisheries. The Alaska Region of the B.C.F. recently was assigned the high seas research vessel *John R. Manning* by transfer from the Hawaiian Region, and it is believed this vessel could be employed effectively in high seas King crab studies outside Bering Sea.

● While not accepted as evidence of depletion in the King crab resources, fishing in the Kodiak and Peninsula areas this winter has been extremely

Studious Alaskans—State Senator **A. A. Owen** of Uganik Bay, Alaska, left; and **John Smith,** Metlakatla, thoughtfully examining documents as members of the Advisory Committee to the American Section of the International North Pacific Fisheries Commission at Vancouver, B. C., in November.

disappointing. This was in sharp contrast with the condition during the latter part of last winter and well into the spring, when fishing for King crab was exceptionally productive, particularly in the waters around the southwest corner of Kodiak Island.

● INPFC studies on the King crab of the Bering Sea were reported upon at the North Pacific conference in Vancouver, with these formal conclusions:

"1. The present fishery, which is concentrated in the Amak Island and Port Moller areas, is catching crabs from the entire area covered by the United States station pattern surveys.

"2. The percentage of recoverable meat to total live weight from new-shelled crabs and old-shelled crabs varies from a mean of 21.3% for new-shelled crabs, and 31.6% for old-shelled crabs."

Thus there is an economic advantage of nearly 50% in utilizing crabs after the shell has fully matured.

Another conclusion stated: "Although the proportion of smaller adult crabs was larger in 1960 than in 1959, the catch per unit of effort of the *Tokei Maru* operation remains at high level. Actually, a rising trend in catch per unit of effort is evident from 1953 to 1960."

● Boris G. Kulikov, the official Soviet Union observer at the INPFC conference, stated:

"The Soviet crab fishing effort in 1960 did not reach the crabs-per-net figures attained by *Tokei Maru*. . . . Our crab fishing is likely to continue on the same scale next year in waters adjacent to Bristol Bay."

● Reports at the conference said both Japanese and Soviet exploratory fishing vessels had been observed in September and October fishing in the area from Sanak to the Shumagin Islands; and that the Japanese at least appeared to be laying tangle nets along the 50-fathom curve.

ADF Proposed 1961 Rules Liberal in Trend

● Reflecting liberalized tendencies generally, Alaska Department of Fish and Game proposals for 1961 regulations were laid before the industry in Juneau Nov. 28 by the Alaska Board of Fish and Game.

Revision of the Bristol Bay gear-time table was the most notable feature of the proposed changes. Under the schedule contemplated for 1961, the Nushagak district would be under increased restriction on fishing time, while the provisions applicable to the Naknek-Kvichak, Egegik and Ugashik districts would be liberalized.

These proposals obviously were designed in anticipation of a repetition of the conditions which developed in 1960, when the major portion of the run came along the east coast of Bristol Bay. The lower rating for Nushagak would tend to encourage residents of that area to register for fishing in the more liberal districts, avoiding the condition which prevailed in 1960 early in the season.

It is also proposed to *eliminate the prohibition of fishing during the 48-hour waiting period following re-registration.*

Details of the proposed gear-time table for Bristol Bay appear in tabular form in connection with this article.

The Snake River section of the Nushagak district is proposed to be closed for fishing except during the period from May 16 to June 26.

Bristol Bay salmon operators at the Juneau hearing asked to have the Bristol Bay regulations changed to provide that 4¾" mesh might be used in even years only, and only on the Nushagak. This is in the period from July 19 to Aug. 30.

Substantial curtailment in the boundaries of the Egegik district of Bristol Bay on the west, proposed by ADF, is developing sharp resistance within the industry.

● Two years of residence in the Kodiak district are proposed to be required for operation of set nets in that district.

King crab fishery exploration and expansion is sought by a provision which occurs generally throughout the regulations for areas where this resource is found or may be present. This is the authorization for King crab fishing vessels to carry otter trawls with a maximum length of 60′ on either head line or ground line. Any King crabs taken in such prospect trawls are to be returned to the sea uninjured, it being specifically provided in areas where these trawls are sanctioned that fishing for King crabs may be conducted only by means of pots or ring nets.

This provision is expected to remove one of the principal sources of complaint about the strictures on King crab trawling imposed last spring.

● Principal change affecting Southeast Alaska generally is the prohibiting of the use of leads on purse seines.

The long list of closed waters in Southeast Alaska is increase in Chilkat Inlet, Port Althorp, Idaho Inlet, Taku Inlet, Seymour Canal and Sukwan Inlet.

The herring spawn controversy of last spring is dealt with by a provision which would permit the taking of 50 tons—spawn and kelp included from Fish Egg, Clam, Alberto and Abbess Islands. Cutting of growing kelp in herring spawning areas is prohibited, and the harvest period is from April 1 to 22.

Proposed 1961 Bristol Bay Gear-Time Table

Nushagak Units	Naknek-Kvichak Units	Egegik Units	Ugashik Units	Fishing Days per week
Over 200	Over 400	Over 80	Over 50	1
168-200	334-400	68-80	43-50	2.5
144-167	287-333	58-67	37-42	3
126-143	251-286	51-57	32-36	3.5
101-125	201-250	41-50	26-31	4
84-100	168-200	34-40	22-25	5
72- 83	144-167	30-33	19-21	6
Under 72	Under 144	Under 30	Under 19	7

NOTE—A unit of gear is one 150-fathom gillnet; and all gear has a unit value directly proportionate to its length on such a unit basis.

Col. J. W. Nicholls, B. C. Fisheries Factor, Dies

Colonel J. W. Nicholls, pioneer British Columbia fishing executive, died recently in Vancouver. He had made his home there since leaving Prince Rupert, where he managed Canadian Fish & Cold Storage Co. for many years. At the time of his death he was president of his own firm, J. W. Nicholls Co., Ltd., wholesale fish dealers and importers.

For the past several years the company he founded has been directed by his son, John.

Chairmen, 1961 and 1960—Iwao Fujita of Japan, new chairman of the International North Pacific Fisheries Commission, clasps hands with his predecessor, George R. Clark of Canada.

Sea Survival of Salmon New Research Objective

● New directions, and new emphasis, for oceanic salmon research under the sponsorship of the International North Pacific Fisheries Commission was proposed to that body at its Vancouver meeting in November by the Canadian Section, speaking through Commissioner Roger T. Hager.

The Canadian Section had no specific plan for the research, he said, but wanted to have the project assigned to the commission's Committee on Biology and Research for report at the 1961 annual meeting in Tokyo. This action was approved by the three countries.

In expressing the Canadian thinking on the matter, Mr. Hager said the commission should seek to learn more about the factors affecting the growth and abundance as mature fish of all major North Pacific salmon runs.

The Canadian view favored a diversification of research effort to give a broader understanding of the distribution of the salmon in the sea during their years of growth, and of the oceanic factors affecting that growth.

Very broadly stated, the proposal was interpreted to call for studies on the part of Canada, Japan and the United States of the factors governing ocean survival and mortalities from natural environmental conditions, with the hope that this knowledge might yield the basis for forecast of the abundance at maturity of all the Pacific salmon species.

Thus it would appear that the Canadian proposal might be the first step in extending the commission's research beyond its primary responsibilities of Abstention and the Provisional Line limiting abstained stocks; and directing new scientific studies toward attainment of knowledge which would permit more accurate management to achieve maximum sustained yield.

● Oceanic environmental factors controlling the natural survival of salmon in the sea are fascinating new fields for fishery biologists.

Out of them may come improved basis for forecast, with its enormous potential for economic benefit through effective resource management and the reduction of wasteful industrial outfitting.

Reaction of the United States Section and its advisors to the Canadian proposal was decidedly favorable and initial steps were instituted to provide means by which researches decided upon might be implemented on the part of the United States with the least possible delay.

1961 Salmon Commission Rules Meeting Dec. 16

An open meeting of the International Pacific Salmon Fisheries Commission will be held on December 16 commencing at 10:00 a.m. in the Bellingham Hotel, Bellingham, Wash.

The purpose of the meeting is to review the management of the 1960 Fraser River sockeye fishery, discuss the expected size of the 1961 Fraser River sockeye and pink salmon populations and propose regulatory controls for them in Convention waters.

U.S. Advisory Group—Haakon B. Friele on the left, then: John W. Smith, Dean Paddock, Peter Tanstad, Dr. R. L. Burgner, W. G. Van Campen (rear), John R. Gilbert.

PACIFIC FISHERMAN'S NEWS
DECEMBER 1960

Soviet Union Makes No Secret Of Its Halibut Fishing Intent

● Soviet halibut operations can be expected soon in the North Pacific, south of the Aleutian Islands and the Alaska Peninsula.

Other operations in this area may be anticipated at any time.

U.S.S.R. fishing activities in the high seas areas of the North Pacific are only just beginning.

● These points were made plainly by Boris G. Kulikov, official Soviet observer, at the International North Pacific Fisheries Commission meeting in Vancouver, B. C., in November.

He stands high in the Soviet regime, far higher than previous Russian observers at the INPFC. He is Chief, International Fisheries Section, of the State Planning Committee, Union of Soviet Specialist Republics.

In his address at an informal meeting attended by persons present at the INPFC meeting, Mr. Kulikov said that the Soviet Union has a catch target of 4.6 million metric tons of fish by 1965. The catch planned for 1960 is 3.3 million tons. Thus this total would have to be increased by more than 200 thousand tons annually until 1965. They are out to do it.

He said that the Soviet operations on bottomfish in the Bering Sea area are running at the rate of 10,000 to 11,000 metric tons monthly; and that they entered King crab fishing in 1960 at a level rather below the Japanese.

Boris G. Kulikov, official observer for the U.S.S.R. at the 1960 conference of the International North Pacific Fisheries Commission.

● Directly with respect to halibut fishing, Mr. Kulikov said:

"We do not specially fish for halibut in this area, and halibut occurs in our catches only as individual specimens and serves as a sort of bonus for the fishermen. It is hard, therefore, to calculate exactly how many specimens are caught in the trawl nets of our fishermen.

"I shall make no attempt, however, to hide our growing interest in this particular fish, or to rule out the possibility of starting experimental fishing for halibut in the near future for exploring the existing situation."

● So much for his prepared statement.

H. E. Lokken, manager of the Fishing Vessel Owners Association, Seattle, and chairman of the Advisory Committee to the United States Section of the INFPC, asked Mr. Kulikov:

"Does the Soviet Union fish south of the Aleutian Islands?"

Answer: "Our main emphasis is in Bering Sea, but we are planning to extend our fisheries south of the Aleutians."

George R. Clark, deputy minister of fisheries for Canada, and chairman of the INFPC, asked two questions: (1) "Are figures kept of your fleet's halibut catch? (2) Do you expect to expand your fishing for halibut into areas other than Bering Sea?"

Answer: (1) "We have no specialized halibut fishing now. The catch is entirely incidental and not large enough to account for. The fish are eaten by the crews of the fishing boats." (2) "We plan to conduct experimental halibut fishing and then shall decide upon the time and place of our halibut fishing as recommended by our scientists."

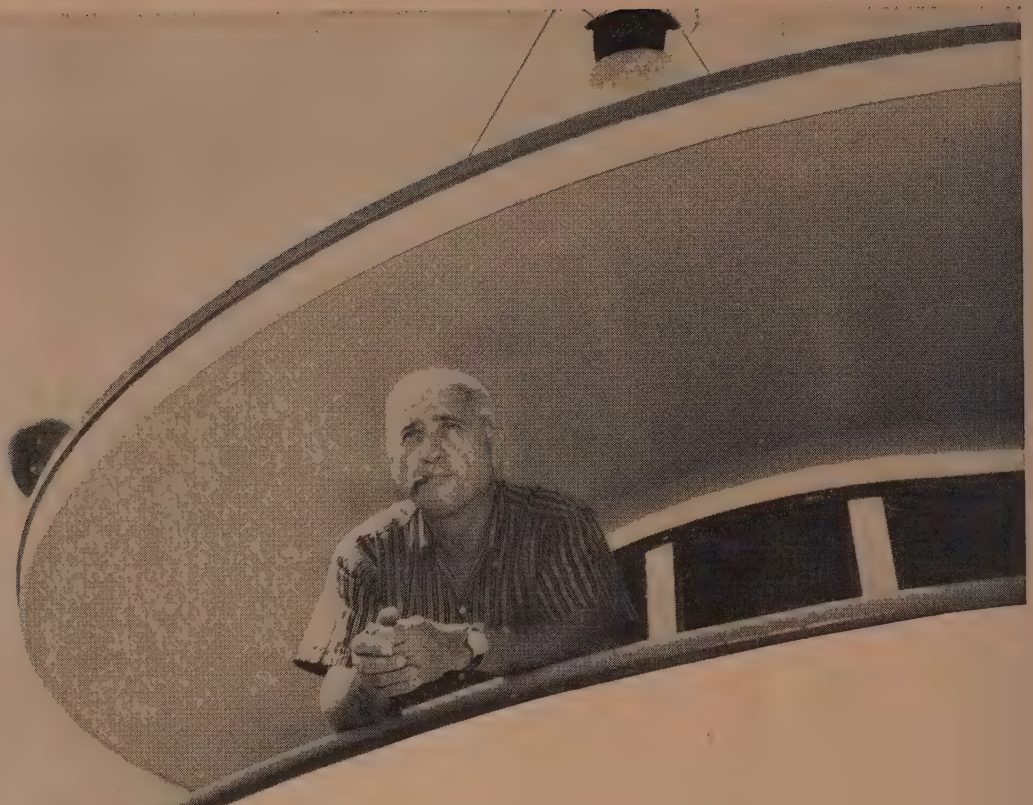
Mr. Clark observed that the halibut management operations of the United States and Canada through the International Pacific Halibut Commission would be materially helped by data as

Sverre Jangaard President Campbell Machine, Inc.

Svere Jangaard, veteran tuna fisherman, was last month named president of Campbell Machine Inc., San Diego shipbuilding firm. Capt. Jangaard will also be yard superintendent.

Part owner of the tuna seiners *West Point* and *Cape Falcon,* and skipper of the *Falcon,* Capt. Jangaard is known as a tireless inventor and innovator of new tuna fishing methods. The *West Point,* a converted clipper, was the first conversion to add a poop deck and first to mount the seine winch on the upper deck, an arrangement now adopted by many converted seiners. Mr. Jangaard also experimented with two-boat trawling in northern waters. The *West Point,* under command of Capt. Carl Hanken, last summer was the first big seiner to try Albacore fishing off the Oregon coast.

The appointment of Mr. Jangaard as president was made by the board of directors of Campbell Machine, of which Mr. Jangaard also becomes chairman, Robert F. Bennett continues as secretary, treasurer and general manager.



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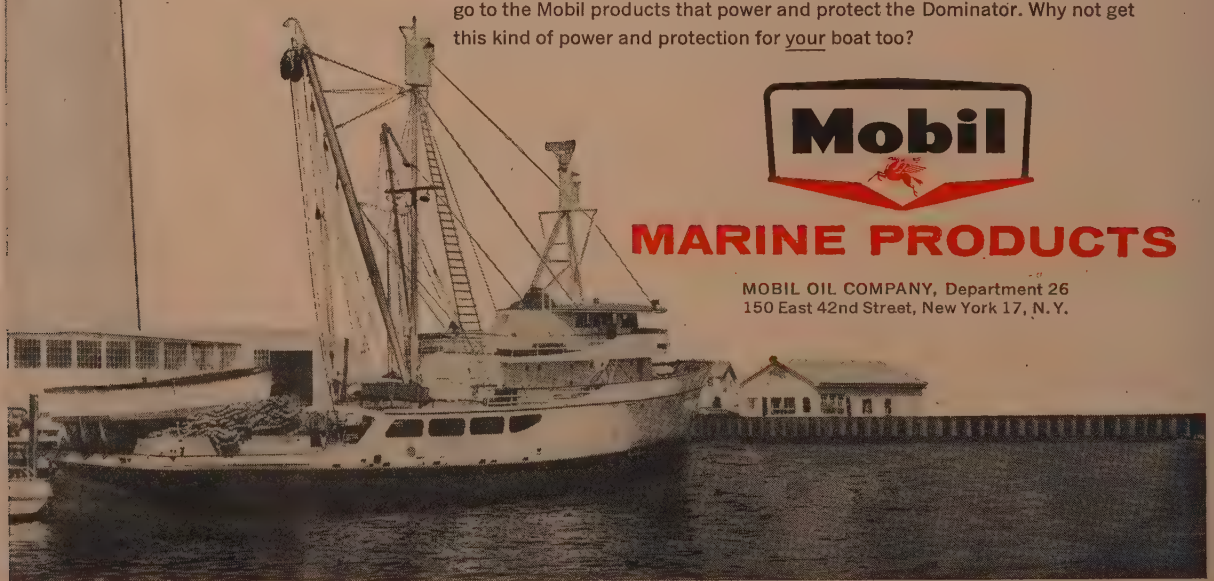

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to the USSR catch of this fish.

To this Mr. Kulikov responded: "When we initiate halibut fishing we will provide all statistical data on our halibut catches."

● Securing of halibut data relating to catches made outside the International Pacific Halibut Convention evidently is a matter of concern to both the United States and Canada.

During the conference request was made by the United States for data on catches of halibut by the Japanese trawl and tanglenet operations in Bering Sea.

Response by Kenjiro Nishamura was that Japan does not grant permits for halibut fishing in the Bering Sea; thus no reports are required; hence data are not available.

● Increasing information on the extent of USSR and Japanese operations in eastern Bering Sea and south of the Aleutians and the Alaska Peninsula was available at the Vancouver meeting from numerous sources. Notably, some of the most specific items came from industrial rather than official sources.

Mr. Lokken was able to supplement older official reports with specific information on these recent observations of operations by vessels of both nations south of the Alaska Peninsula:

Sept. 4, 1960:—One Japanese vessel was observed fishing with tanglenets between Sanak and the Shumagins, in an area where the American fishing vessel making the observation was taking 5,000 lbs. of halibut daily. A large Trawler was also seen in the vicinity.

Sept. 8, 1960—Two USSR trawlers were seen operating 60 miles from the Shumagin Islands in an area where the Canadian vessel reporting was taking 3,000 lbs. of halibut in two days. Two Japanese vessels were also seen in the same general area.

Sept. 10, 1960—Two Japanese vessels were observed fishing 15 miles offshore from the Shumagin Islands in an area where the Canadian vessel making the report was taking 5,000 lbs. of halibut daily.

The U. S. Bureau of Commercial Fisheries previously reported that USSR trawlers had been observed during the summer of 1960 working within 60 miles of Seward and within 100 miles of Sitka.

● It is notable that estimates of industry sources on the extent of the Japanese and Soviet operations in Bering Sea tend to run much above those by the U. S. Bureau of Commercial Fisheries.

Estimates heard at Vancouver ran from 700 million pounds for the combined Japanese and Russian operations to 1,000 million pounds for Japan alone.

● In considering the possibility of Japanese operations catching substantial quantities of halibut, with some observers believing the total might exceed 5 million pounds in Bering Sea, it is notable that apparently no frozen halibut is being offered this year in the United Kingdom by the Japanese, where in 1959 substantial quantities were sold.

B. C. Herring Men Fish Again After 11-Months Tie-Up

● After 11 months' tieup, British Columbia herring fishermen resumed operations late in November following their union's acceptance of terms similar to those offered by operators some time ago.

"Only sheer economic pressure of an 11-month lockout by the companies forced union acceptance," stated the union's spokesman. "There is nothing in the new amendments which represents any gain for the fishermen."

The fishermen finally accepted a price of $8.80 a ton, compared with the $13 originally included in the agreement signed in October, 1959. Fishermen, landing reduction herring without packers, now receive $1.10 per man per ton. Formerly they received $1.62½ a ton for catching and packing herring to the plant.

All tendermen have been excluded from the operation. The union maintains that as a result some 350 men will be unemployed, but the Fisheries Association contends that most of these men will be absorbed in the industry.

The $13 price originally established prevailed for only a short time, as the operators decided that a slump in the market made continued operation at that price uneconomic. Operators offered $8.80, without tendermen, but this was refused.

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Unconventional stepping of the mast far aft, and well to starboard of the centerline is evident in this photo, taken from high on the foremast. Note the twin booms and the rigid stays for the mast. Box-like structure at extreme lower right is the hydraulic valve console from which power block, purse winch and schooner guy are controlled.

● The revolution in tuna seining continues.

Although the rush of conversions from clippers to seiners is slowing, conversion of the two big vessels *Spirito Santo* and *American Queen* has brought out perhaps the biggest innovations and the most far-reaching changes in methods of catching and stowing tuna yet tried in this fast-changing branch of the Pacific fisheries.

● The two newly-made seiners, sister ships, have a revolutionary off-centerline king-post arrangement for the boom aft, which:

1. Eliminates the conventional tall mast;
2. Allows the use of booms little more than half the conventional length;
3. Places the booms (and the power-block) about 30′ abaft the conventional position, and over on the starboard side;
4. Permits picking up the net with the block while it is being pursed, whenever that should prove necessary.

Three-Way Brailing

● The two new seiners also have a three-way brailing arrangement, designed to speed-up stowing the fish. They have no turntables. Lower decks are completely enclosed, and watertight. Booms may be stowed in chocks almost horizontal for protection of gear and safety of personnel. The boats also have complete hydraulic controls, up-to-date navigation aids and all the other features which, while no longer revolutionary, are ultra-modern.

To begin with, the *Spirito Santo* and *American Queen* are big vessels: 152′ long by 36′ beam. Wood hulls, built by Western Boat Building Co., Tacoma, Wash., they have modified cruiser sterns, tapering but not to a point like the *Sun Europa,* another recent conversion, which was sponsoned out at the stern during conversion to the conventional fan-tail shape. No such modification was necessary on the *Spirito* or the *Queen.* Both conversions were done by Fellows & Stewart, Terminal Island, Calif.

American Queen is owned jointly by Frank Perry and Van Camp Sea Food Co. the *Spirito Santo* by Mr. and Mrs. Perry. Both seiners will fish for National Packing Co., Van Camp affiliate in Puerto Rico, and will be based in Ponce. The *American Queen* is the former *Mary E. Petrich.*

King-Post Replaces Mast

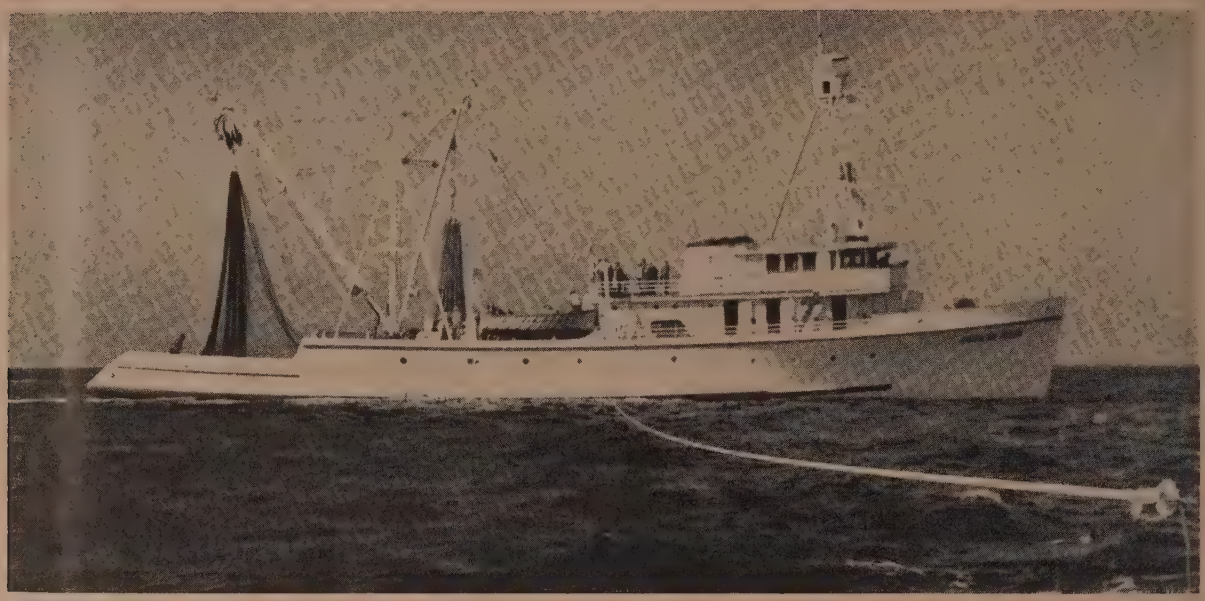
● The king-post arrangement on the after-deck is the most spectacular and revolutionary innovation on the new vessels.

Instead of a high mast almost amidships, near the big pursing winch, as is conventional with almost all conversions, the new ships have a short king-post, stepped on the lower deck, to starboard of the centerline, and standing 36 ft. over the main deck, and firmly guyed with a steel pipe framework bolted to the deck and sides. This king-post holds the lines and blocks by which both booms are maneuvered. As usual, one boom supports the big Puretic power-block on the end, the other is fitted with the necessary blocks and lines.

The king-post and booms are well aft of the pursing winch, standing over the area where the net is handled during fishing. This permits the use of much shorter booms. Those on the *Queen* and *Spirito* are 42′ long. According to Mr. Perry, and to Charles Weaver of Fellows & Stewart, who drew the designs for the conversions, it would have been necessary to use 80′ conventional booms on vessels the size of these.

It is strongly pointed out by Messrs. Perry and Weaver, and also by Charles Buchan Sr. and Jr., that a short boom is immeasurably safer than an excessively long one. Booms have been known to break loose, and in rough weather a wild boom out of control can do a lot of damage in a few seconds. Mr. Buchan Sr. is cannery advisor on vessels, and Mr. Buchan Jr. is construction superintendent at Fellows & Stewart.

The main deck of the new vessels extends aft all the way to the net storage area. This gives ample room



Pioneering American Queen demonstrating her unusual fishing arrangements. Note particularly the far-aft stepping of the mast, its rigid stays and two booms. The forward positioned boom has the rings up, while the power block on the main boom is loading seine. It's this kind of fast fishing that makes these great vessels profitable. Line in the foreground is the towline from the seine skiff, which is towing-off against the drag incident to loading the net.

to work. The pursing winch is placed in the usual spot almost amidships below the after edge of the top deck, but the towing winch, which in some conversions is placed on the top deck, is on the main deck, aft, near the king-post. The starboard vang winch, which controls the back - and - forth motion of the boom, is also placed in that area, while the port vang winch is on the top deck, conventionally placed.

For Fast Stowing

● Not seen at first glance, but as important an innovation as the king-post arrangement, is the brailing system of the *Queen* and *Spirito*.

The vessels have no less than three fish hoppers, all made out of ventilators from trans-oceanic liners. All are mounted on the lower deck aft. Two of them swing outboard on pivoting davits, and when the time comes to brail fish, they are in the handiest possible position, clear of the sides of the ship, completely outboard.

These outboard hoppers work through rectangular ports in the ship's side, and when not in use are brought inboard. The port is closed with stout dogs, and is made water-tight. The rail on the lower deck has been built up solidly to the level of the upper deck, and can be closed completely against the weather. This makes a dry, water-tight lower deck, intended to make the new vessels better sea boats and faster cruisers. The forward part of the water-tight lower deck is occupied by the galley, compressor room and forepeak storage, as usual.

The third fish hopper is mounted inboard, on the lower deck, and delivers fish into either of two hatches into the holds below. This is a conventional arrangement on seiners on which the main deck is the working deck. The outboard hoppers direct fish either straight into nearby hatches or via flumes to hatches over on the starboard side. The inboard hopper is filled through a hatch in the main deck.

In making the conversions, only the after bait tank was removed, the forward tank remaining in place to be used as a fish well. It can also be used as a bait tank, although the question of what a seiner wants with bait remains unanswered.

Mug-Up After Trials of American Queen—Here is Capt. Frank Perry, co-owner of the gigantic, unusual seiner, between Charles Buchan Jr., left, Fellows & Stewart construction superintendent on the **American Queen job;** and Bill Horner Jr. of the Van Camp Sea Food Co. fleet office.

Works long shifts at slow speeds—Yet no sign of engine deposits after 15,800 hours

MV Two Brothers works long, hard hours at slow, engine-punishing speeds, dragging for fish out of New Bedford, Mass. This 50 ft. fishing boat is powered by a Caterpillar D-13000 engine using RPM DELO Oil exclusively since new. Yet, after 13 years of severe service engine parts remain clean, show surprisingly little wear.

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Starboard detail of the "American Queen's" unusual fishing mast and boom arrangement. Note the rigid stays on the mast and the relatively short booms. As there are two booms, fishing is speeded-up materially.

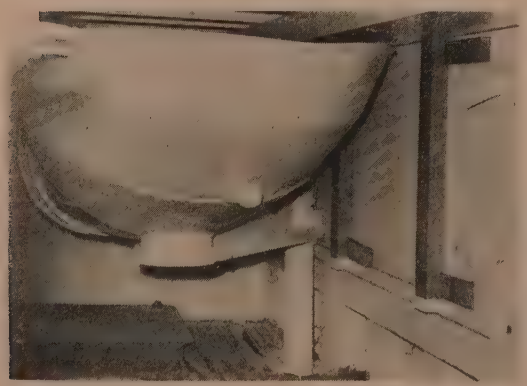
Towering net tackle of "American Queen." Note her stable stern as remodeled for seining. Off-center stepping of the mast is plainly evident, as is its rigid staying.

32-in. Poop Deck

● The new vessels have no turntables. Instead, the net is carried on a poop-deck at the usual extreme aft position, the deck surface being raised 32" above the old lower deck. The after-deck is fitted outboard with stout steel pipe rails which come in very handy when the skiff is being handled from the vessel and at other times during fishing operations. The apron at the extreme stern has been reinforced with metal and slanted toward the water-line, with a heavy metal groove on which the skiff rides when coming on or off the vessel.

The skiff was built by Fellows & Stewart, and measures 28' long by 16' beam. She is powered with a 100-hp. Ford Osco motor, with a 4:1 reduction, turning a 32" wheel, a new power arrangement devised by Fellows & Stewart to give more flexible power which can be more promptly applied. The skiff has a hydraulically-controlled winch driven from a power take-off off the main engine. All hydraulic systems were designed and installed by Marine Construction & Design Co. of Seattle, using Vickers pumps and valves, and Aeroquip hose.

Mounted in a panel on the top deck on the port side, overlooking the pursing winch and all the fishing operations are the hydraulic controls for the power block, vang winches, topping lift and schooner guy. Controls for the towing winch (which is also used for picking up the rings and the skiff) are mounted near the winch itself, aft on the main deck on the starboard side.



One of the outboard brailing hoppers — shown here in inboard position. When fish are being brailed from the net the hopper is swung out through the port at the right. Fish dropped into it slide by chute directly into brine tanks.

Big Nylon Nets

● The big all-nylon nets for both vessels were made by the Linen Thread Co. and supplied through Nuttall-Styris Co. in San Diego and Seaside Supply Stores, San Pedro. They measure 490 fathoms long with seven strips of 4⅛" mesh and 50 meshes of 8" webbing. The net is held up by 7000 Spongex (Goodrich) floats, and is held down by a lead line composed of a 9/16" galvanized steel chain.

American Queen's propulsion power comes from a Fairbanks-Morse 10-cylinder 1800-hp. diesel engine. Her auxiliaries are two Fairbanks-Morse 210-hp. six-cylinder diesels.

Roland Virissimo will be the skipper in charge of the *Queen*, Raymond Dragitch will be her mast man and Harry Justice her engineer. Based in Ponce, there is no telling where she will go for fish—possibly off the West Coast of Africa, or in the Pacific off South America, or in the Caribbean, or the Atlantic along the Northeast coast of South America.

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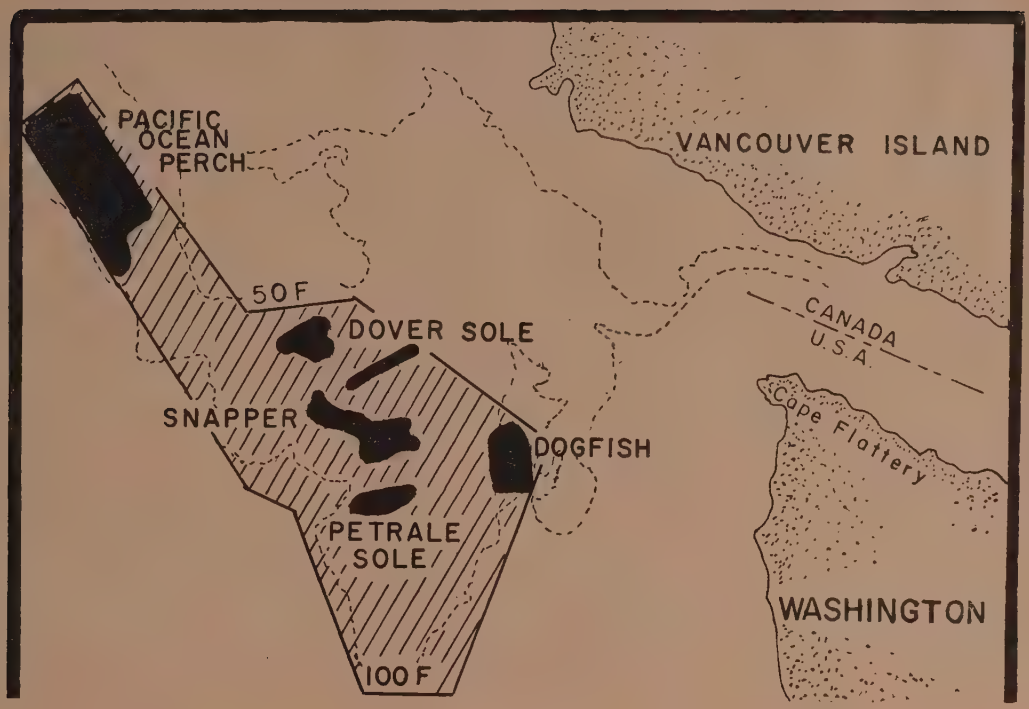

Pin-Pointing Productive Bottom With Super-Sounders and Drags

By D. L. ALVERSON

● Large segments of the continental shelf adjacent to the coasts of Oregon, Washington, and British Columbia are not fished by trawlers because the substrate is considered too rough to pass fishing nets. During the spring and summer of 1960 two investigations were conducted by the Bureau of Commercial Fisheries' Exploratory Fishing Base at Seattle to determine possibilities of carrying out trawl fishing in areas reported as having foul or "unfishable" bottom.

We have, in the past, attempted several such explorations in areas where bedrock, large boulders, or other bottom obstructions prevailed. However, conducting experimental fishing in such areas by following some predetermined station pattern or by selecting possible trawl areas solely on the topographic features reflected by the echo sounder has resulted in high gear loss. The success of these ventures was also highly fortuitous.

In the past several years technical improvements in commercial echo sounders have resulted in instruments which are more definitive with respect to the substrate, that is, mud, sand, clay, or bedrock. Interpretation of echo traces and type of bottom, even with these more refined instruments, requires considerable experience, but it is relatively easy to differentiate mud bottom from that composed of rock. Thus better instrumentation has made it possible to conduct more systematic operations.

In discussing with our local trawl groups the practicality of carrying out fishing in areas known as "rockpiles," it seems certain that, if even small areas free of snags could be located, precision navigation with loran and/or radar would allow trawling in newly discovered grounds. Two areas were selected for experimental trawling by the U. S. exploratory vessel *John N. Cobb*. These were known to have rough bottom characteristics. The first survey was conducted during April, May and June on grounds west of the Straits of Juan de Fuca known as the "spit"; and the second during July and August adjacent to the Scott Island group on the northwest tip of Vancouver Island.

● To obtain maximum results from the survey, a procedure involving three phases was devised. First, sounding transects were made using a high-resolution research echo sounder. The echo-sounder traces made from these transects were then studied and the indicated characteristics of the bottom plotted on the navigational charts of the area. This provided us a relatively good indication of the bottom

NOTE—Mr. Alverson is chief of the Exploratory Fishing and Gear Research Branch, U. S. Bureau of Commercial Fisheries, Seattle. This article was presented as a paper at the 1960 meeting of the Pacific Marine Fisheries Commission, Portland, Ore., Nov. 28-30, 1960.

NOTE—The **John N. Cobb** is equipped with a Simrad "white line" research model echo sounder of high-resolution, low-frequency type. It is understood that this is the instrument used in the exploratory work described by Mr. Alverson.

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Harry (left) and Angelo Urbani, co-owners, with their brother Rex, of the Northern Light. The 50-foot trawler, with a 14-foot beam, is fishing for bottom fish out of Noyo Harbor, Ft. Bragg, California. She's powered by a 1200 RPM 150 HP (continuous) Murphy Diesel which swings a 38 x 30 propeller.

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features of the area under study. The second phase involved a resurvey of the grounds, making drags with a snag chain (two 20-fathom lengths of dandyline gear and 43-foot chain—total length 283 feet) secured between the otterboards. Obviously, greatest emphasis was placed on surveying areas which showed promise of soft bottom during the echo-sounder survey. Snag-chain surveys delineated the extent of ground suitable for trawling, and the final phase of the investigation required only making test drags with a standard 400-mesh Eastern trawl to determine the types, sizes, and relative abundance of fish on the areas found suitable for trawling.

Results of the two surveys were very encouraging. In the "spit" area commercial quantities of groundfish were found in four separate areas. The first area delineated produced principally petrale sole. Each of two 60-minute tows here caught 1,200 pounds of this species at depths from 61 to 79 fathoms. Tows in the deeper water of this area produced moderate catches of rockfish. This area covers approximately 15 square miles. The second area defined produced principally Dover sole. Two 70-minute tows here produced 4,000 and 3,800 pounds of this species at depths from 57 to 72 fathoms. This area measures approximately 10 square miles. A 90-minute tow adjacent to this area in 72-80 fathoms took 1,500 pounds of Dover sole. The third area produced principally snappers (rockfish). Catches here ranged from approximately 500 pounds to 4,500 pounds per hour in depths from 70 to 80 fathoms. This area is approximately 10 miles long and 2 to 3 miles wide. The fourth area located produced excellent catches of Pacific Ocean perch. Five tows here produced perch at rates from 500 to 4,000 pounds per hour in depths ranging from 75 to 92 fathoms. This was the largest clear area found and measured about 10 by 6 miles.

A fifth area of clear dragging bottom was delineated; however, tows here produced only large catches of dogfish. This area measured approximately 2½ by 4 miles and ranged in depth from 75 to 98 fathoms.

Splitting a Successful Drag, largely of rockfish, as it comes alongside the **John N. Cobb** in the course of fishing clear areas found among the "rock-piles" as described in this article.

● Off the northwest tip of Vancouver Island a relatively large clear area of approximately 60 square miles was found northwest of Triangle Island. Catches of 3,000 pounds of rockfish and from 200 to 700 pounds of Dover sole per hour of towing were commonly made in this area at depths from 75 to 115 fathoms. Good catches of rock sole and true cod were obtained at depths from 50 to 75 fathoms.

Several small patches of clear dragging bottom were found south of the Scott Islands where the commercial trawl fleet had previously been unable to fish. Good catches of rockfish and Dover sole were taken in this area.

Only a small patch of clear bottom was found in the limited time available for surveying the Queen Charlotte Sound region. As precise radio bearings are difficult to obtain in this area and it is too far from shore to obtain radar fixes from coastal promontories, commercial trawlers would probably not be able to position themselves accurately enough to utilize this restricted ground. Future work to extend the survey thus seems advisable for this region.

I think it is important to point out that results of fish catches made during test drags are only indicators of the stocks of fish inhabiting the grounds in the particular instant that the drag was made. Although good results may quickly attract commercial fishing to the area, the real contribution to the fishing industry is that of defining grounds suitable for trawling.

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NEW BOATS?

More Than 100 Building In Pacific Northwest; With More Coming Up

• With over 100 new vessels actually under construction for 1961 fishing, and prospects that the figure may grow to as many as 150 in Washington state yards alone, the boatbuilding industry, sparked by the increased demand for Alaska gillnetters, is showing the signs of revival indicated in last winter's trend.

Here are some facts:

Bryant Boats, Incorporated, at Everett, Wash., has received orders through Bryant's Marina, Inc., Seattle, for construction of 52 gillnet boats. These are the new Bryant "Super Highliner" for Bristol Bay operation. The orders represent only those canners and fishermen who have made specific contracts. With numerous other orders "in the wind", the actual production may well reach a higher figure. The 32-footers, variously powered, are based on the now-conventional Bryant wooden gillnetter hull, with latest modifications.

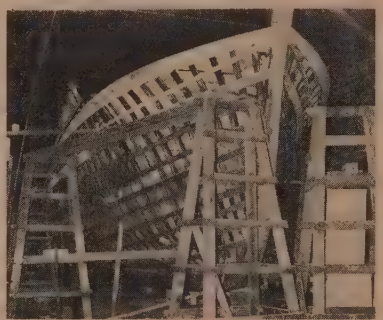
Commercial Marine Construction Co., Seattle, has completed two gillnet boats (see Oct. *PF*, p. 25) and now has 9 or 10 more under construction. As orders come in, the indications are that total construction will run to a score or more of these wooden 32' Bristol Bay-class vessels.

Grandy Boat Co., Seattle, has built all three of new 42' seiners for Kadiak Fisheries, Inc., and the first boat, *Sophia K.,* had gone north. The second, *Peril Cape* was due to depart when this was written and the third was about due for trials.

Harold Hansen Boat Co., Seattle, is completing one of the largest craft ever built in its marine ways, nearly filling all the covered area. The hull (see illustration) is 58 by 18', with a moulded depth of 8'. This will be a "limit" boat in every respect, being built from keel-up to the same requirements which Alaska-limit rules have called for in the shortening of so many seiners. This yard earlier built the *Mystery Maid* (see p. 24, August *PF*).

Jacobsen Boat Co., Seattle, earlier built two 9½-knot, 53' seiners *Island Queen* and *Terry K* (*PF* July and August). Now the yard is completing a 49' by 14'8" seiner for operation by Jack Davis, who formerly had the 50' seiner *June*. The new boat will draw about 5½'; will be launched this winter.

Marine Construction & Design Co. will build 20 steel seine skiffs this winter in its Seattle yard. The new 17' x 9' boats will use Western Ford air-cooled diesels.



Alaska limit seiner with 58' overall length under construction in the Harold Hansen Boat Co. yard, Seattle.

Pacific Fishermen, Inc., is one of the Seattle yards which have heretofore largely specialized in repair work, but they now have under construction one of the largest new seiners being built. Another interesting aspect of the boat is that its "built-to-the-limit" construction involved especially long oak pieces for the framing, and since these were not immediately available the construction of the forward deck and house was carried forth on the molds (see photo). The shelf and clamps were set into the mold, and the house and deck were nearly completed by the time oak frames arrived. Then framing and planking could be done in the normal fashion. The 58' seiner, 17½' beam and 8½' deep, is for Hans Hoddevik, is designed by Edwin Monk to meet "Alaska limit" requirements, and will be fitted to combine dragging and halibut fishing when not busy in the salmon seining season. Power will be a new GM Detroit diesel, Series 110 with 227 continuous hp. at 1800 rpm., with 4½:1 reduction and Coolidge 54" propeller. Boat will use a Rowe drag winch, 500-fathom, model 16AB.

Sagstad's Marina, Inc., Seattle, built three beach seiners, 34'—the *Rebel, Solveig,* and *Linda Lee,* reported earlier this year (see *PF* July, p 29), and is one of the yards which reports increased interest in medium-sized seiners of lower than "limit" size.

Tripple & Everett Marine Ways, Inc., has built four new boats for fishermen, three of which have already gone to work—the 44' seiner *Citation,* powered by a GM 6-71; the 35' tunnel-stern seiner *Johnny B.* and sister ship *Valorie Dru,* both powered by Western Ford 6-cylinder diesels from Pacific Fishing & Trading. A 42' troller is not complete yet.

• This makes a fairly complete survey of Seattle yards, but other Washington yards report renewed activity in fishboat construction too. Here are a few of them:

Alfab, Inc., at Edmonds, Wash., is continuing its construction of the two all-aluminum seiners mentioned earlier (see p. 22, Sept. *PF*).

Bellingham Shipyards Co. has completed the framing, deck beams and planking for what may be the largest "limit" seiner of all in new construction, a craft 58' 3" overall for Peter

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Zuanich. The boat was reported p. 19, September *PF* with its design by P. F. Spaulding & Associates.

Foss Boat & Joiner Shop, Eagledale, is currently building three Bristol Bay type gillnetters, one with a 135-hp. Caterpiller diesel, another with a 165-hp. Norseman marine gasoline engine.

Ilwaco Boat Works has received a contract to build the largest fishing vessel in its history, a 65′ hull which will require expansion of the yard's facilities. The construction was scheduled to begin at this writing, after extension of the firm's tideland property and strengthening of the marine railway. M. A. Culver of Portland, Ore., will be the owner of the tuna fishing boat, whose beam will be 18′, 9′ and draft 7′. The wooden hull will accommodate seven and carry 4,000 gallons of fuel, for a 370-hp. diesel.

Kazulin - Cole Shipbuilding Corp., Tacoma, is currently building two gillnet hulls for stock and recently achieved recognition for his welded-aluminum seine skiff (see *PF* July, p. 28). The stock building of gillnetters is likely to be part of a continuing program, the builder reports, because of increased interest in gillnetters. The new boats are Kazulin's newest model, for this type of fishing.

Marine View Boat Building Co., Tacoma, has a 30′ Puget Sound gillnetter being built by Willard Anderson. The yard itself built a troller and two gillnetters this spring and reports continued gillnetter interest, at present.

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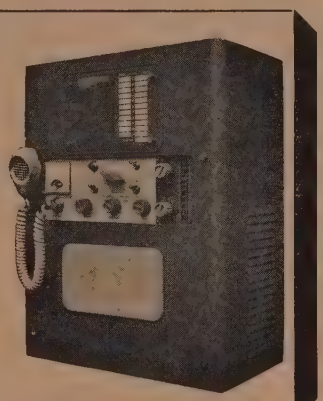

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Hans Hoddevik's Alaska limit purse seiner in frame at the yard of Pacific Fishermen, Inc.

Hansen Boat Co. of Tacoma, next door to Marine View, is building a 45′ seiner for John Breskovich. The hull is nearly complete and will receive a GM 6-71.

J. M. Martinac Shipbuilding Corp., Tacoma, as reported here last September (p. 20) is progressing well on its new 142′ tuna seiner, which of course bulks large among the new vessels.

Peterson Boat Building Co., another Tacoma yard which has converted to steel building capabilities, has nearly completed a second medium-sized steel seiner, nearly a twin sister to the 45′, 6-man seiner *Mustang*. A third *"Mustang"*-class seiner is being prefrabricated, too.

Ron Rawson, Inc., at Houghton, on the location of the Lake Washington Shipyards, has expanded his production of fiberglass hulls and currently has a series of at least eight or nine gillnetters. The Rawson Bristol Bay type gillnetter was pioneered last season when a similar series went north.

Skagit Plastics, Inc., is another builder specializing in plastic hulls—this at LaConner, Wash. Experimenting some time back with plastic gillnetters and seine skiffs, they now have completed and tested a new 31′ planing-hull craft called the *Thunderchief*.

● In general, then, the slightly-improved boatbuilding climate noted in the 1959-1960 boatbuilding season appears to have improved further in the current cycle of building. The requirements for new vessels in 1961 fishing, even in areas where fishing was poor and even where prospects are poor, appears inevitable as the entire fishing fleet becomes one year older and as possibilities for rebuilding are used-up.

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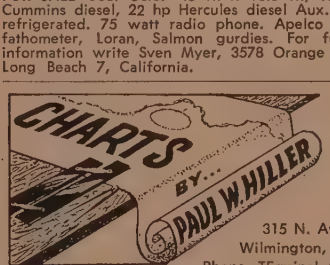

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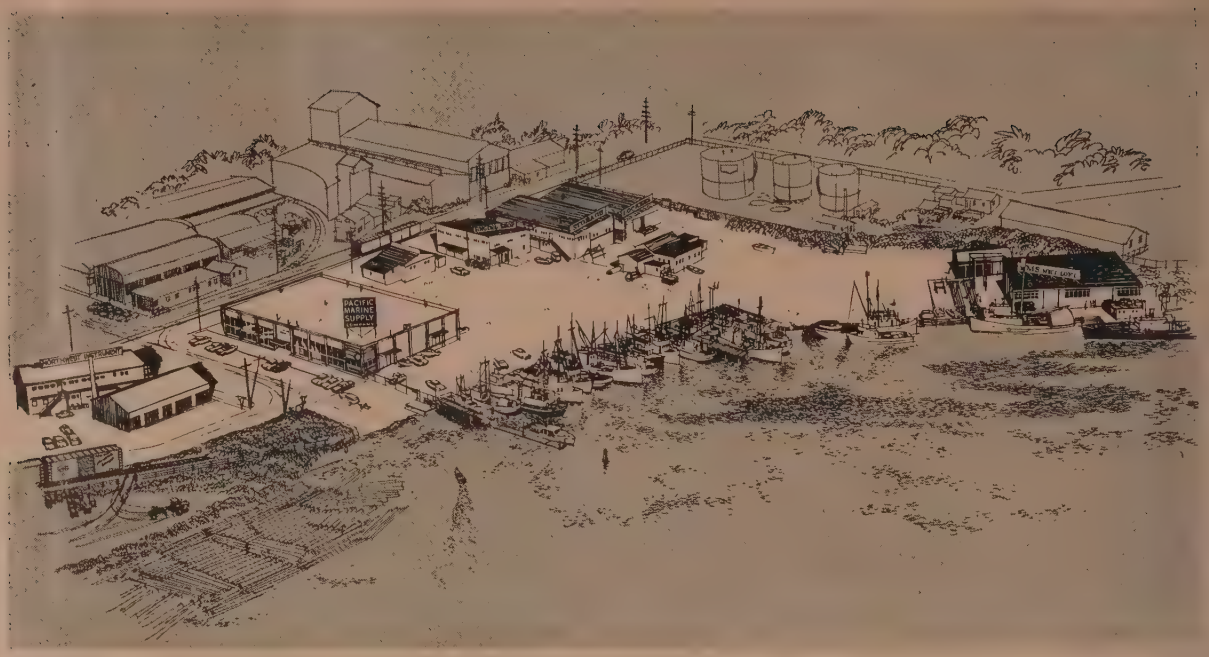


NOW... for your convenience

Pacific Marine's FISHING Supply and ENGINE Depts.

HAVE MOVED

to 4420 14th N.W.

(Northeast of Ballard Bridge)

These departments have been consolidated with Pacific Fishing and Trading Company, a subsidiary of Pacific Marine Supply Company since 1918. The combined operation is now known as Pacific Marine Supply Company, Ballard Division.

All fishing supply sales, storage lockers, loading and unloading, and engine sales and service will operate here. A new net loft, and a new net treatment shed has been built to give you better service.

New Products Too!

Several new marine items have been added to our stocks . . . including a new better type of netting shown for the first time!

Pacific Marine Supply Co.

1223 WESTERN AVE. • SEATTLE 1 • MU. 2-4848

One Alaskan, Four Canadians—Walter Kirkness, Alaska Department of Fisheries, left, then: Dr. H. Godfrey, Dr. L. Margolis, Dr. A. W. H. Needler and Dr. W. M. Sprules, all of the Fisheries Research Board of Canada.

International Salmon Scientists Achieve New Degree of Agreement

● Degree of agreement on salmon research findings by the scientists of Japan, Canada and the United States was one of the truly noteworthy aspects of the seventh annual meeting of the International North Pacific Fisheries Commission, held in Vancouver, B. C., in November.

The consensus was reached only after weeks of "hammering-out process" in which every fact and every step by which it was reached was subjected to the closest questioning in what Commissioner Roger T. Hager called "an invigorating and productive climate for scientists."

Japan's scientists are headed by a new director, Dr. H. Aikawa, who has succeeded Dr. M. Fujinaga as head of the Fishery Agency's scientific section. However, the sharpest critic of the United States and Canadian Sockeye researches was K. Yonezawa, the biologist who spent the season of 1960 on Bristol Bay as an observer on behalf of the Japanese Fishery Agency.

● The vigor of his attack is credited in large degree as having produced the insistence upon "reasonableness" in scientific determinations which was a notable feature of the opening remarks of M. E. Brooding, spokesman for the United States section.

In the long run, however, the "hammering-out process" yielded a scientific report of 142 pages which was regarded as one of the most notable achievements of the INPFC research, both in the content and in the consensus which characterized it.

● The report is voluminous and can only be touched upon here; but some of the significant points upon which the scientists of the three nations were agreed are summarized thus in the language of the report itself:

Speaking of Sockeyes—

"Maturing fish of Rivers Inlet-Smith Inlet type are found as far west as 155° west longitude. . . . Immature fish of this type were found mainly further west, as far as 170° West Longitude."

"During May and June . . . the great majority of mature Sockeye immediately south of the Aleutians at least as far west as 180° were bound for Bristol Bay. Many of these Bristol Bay fish were later intercepted by the mothership fishery operating in southern Bering Sea. . . . Westward from 180° immediately south of the Aleutions . . . as far west as Attu Bristol Bay fish formed a substantial part of the maturing fish present. . . . Tagging as far west as 177° East recoveries were made only in Bristol Bay and in the mothership fishery near where the fish were tagged, suggesting that the Bristol Bay Sockeye formed a majority of the matures in this area.

● For Pinks and Chums the findings were very different.

Pinks in the Aleutian area were found to be (1) Asian stocks; (2) stocks from Alaska above the Alaska Peninsula to Kotzebue Sound; (3) limited local runs to Aleutian Island streams.

"During odd-numbered years Asian Pinks greatly dominated Aleutian waters." Data for even years indicated Asian and American Pinks in approximately equal numbers in Central Aleutian waters.

Chums were found to be produced more abundantly in Asia than in North America. They become distributed widely throughout the North Pacific and Bering Sea by the time they have completed their first year in the sea; and they intermingle extensively.

"Chums tagged as far west as 177° west in the Aleutian area have been recovered in North America, and some tagged as far east as 163° west have been recovered in Asia."

● The subcommittee which produced the report on Sockeye salmon was headed by Fred Cleaver of the United States as convenor. Advisors on the part of the United States included: D. L. McKernan, Dr. J. L. McHugh, R. A. Fredin, Kenneth Mosher, Tak Miyahara, Frank Fukuhara, George Ridgway and Allan Hartt.

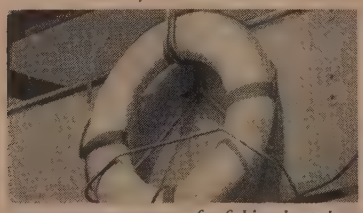
For Canada the Sockeye subcommittee was composed of Dr. L. Margolis, member, Dr. A. W. H. Needler, Dr. W. E. Ricker, Dr. M. P. Shepard, Dr. H. Godfrey.

For Japan, the member was Dr. K. Taguchi, with Dr. H. Aikawa, T. Matsushita, T. Ishida and K. Yone-

Spongex floats a MUST

. . . says Captain Norman Mezin, San Pedro, Calif.

"We consider Spongex floats a *MUST* aboard the 'Determined', our 121′ tuna purse seiner," says Captain Norman Mezin of San Pedro, California. "We were one of the first tuna bait boats to convert to purse seining. We added Spongex floats and have been very successful ever since.



These ring life buoys *for fishing boats have all the advantages of B.F.Goodrich Spongex floats. U.S. Coast Guard approved and accepted by commercial lines.*

"Most of our fishing is done off the Coast of Peru. We were high boat out of San Pedro in '59 with a total of 1550 tons of tuna—and Spongex helped make this possible," said Captain Mezin.

These B.F.Goodrich floats have earned enthusiastic approval by fishermen everywhere because of their toughness, light weight, permanent buoyancy. Practically indestructible, they won't break, crumble, need no maintenance. And they never waterlog to add extra weight to nets. B.F.Goodrich floats come in 17 sizes, ranging from 3″ x 1½″ to 6″ x 14″. For full information, write *The B.F.Goodrich Company, 145 Derby Place, Shelton, Connecticut.* Made under Pat. No. 2,737,508

MARINE PRODUCTS BY B.F.Goodrich

zawa.

Pink subcommittee convenor was Dr. T. Ishida, with K. Yonezawa; for Canada, Dr. Ferris Neave and H. Godfrey.

For the United States A. C. Hartt, with R. E. Anas and W. H. Noerenberg.

Chum salmon subcommittee had as convenor Dr. M. P. Shepard of Canada, advised by T. H. Bilton, A. J. Dodimead and J. I. Manzer.

Japan's member on Chums was T. Matsushita, with T. Ishida and Y. Fukuda.

United States member on Chums was Ralph P. Silliman, advised by Walter Kirkness, J. LaLanne, Dr. C. DiConstanzo, M. G. Hanavan and T. Miyahara.

New England Retirements Produce Several Shifts

S. M. Rosenberg, President of New England Fish Company, in November has announced that on January 1 Jay S. Gage will succeed Oscar Bergseth, who is retiring as general superintendent of the company. Mr. Bergseth is a well known figure in the salmon business having been general superintendent of the company's operations for the past 30 years. He began his career in the salmon business in 1911.

In addition to Mr. Gage becoming general superintendent, Howard W. Lee will become superintendent at Ketchikan, succeeding J. K. Johnson; and Ole Lie will become superintendent at Noyes Island, succeeding H. E. "Jack" Dempsey.

Both Mr. Johnson and Mr. Dempsey are retiring after many years as cannery superintendents with the company. James E. Forsell will replace Mr. Lee, who has been superintendent of the company's Orca cannery at Cordova, Alaska.

Two other long-time figures in the salmon business and executives of New England also will retire on December 31. These are E. E. Murray, who has been associated as division manager at Nefco's Alaska Pacific Division, and Harry R. Beard, the company's research director.

La Vere Redfield Gets Five Years in Prison

La Vere Redfield, Nevada financier who once acquired a substantial stock interest in Pacific American Fisheries, Inc., was convicted in Las Vegas in November on a charge of income tax evasion. He was sentenced to five years in prison, fined $60,000, and charged with $50,000 trial costs.

Research—Expanded, Persistent Research

The Price of Permanence for the Salmon Resource

Persistent research—expanded, continuous, co-ordinated research—is the price of permanence in the North Pacific fisheries.

● That was the central theme in the thinking of American salmon canners as they met at Ojai, Calif., in November at the 47th annual convention of the Association of Pacific Fisheries.

● Scientific study of all species over all latitudes is essential—and it must be objectively done, and honestly applied—if the resources are to be maintained to serve the ever-growing requirements of Earth's ever-growing population . . .

So the thinking ran. And it went further:

With the greatest fishing nations of the world devoting increasing attention to the utilization of the resources of the greatest ocean of the world, there is urgency which cannot be denied for research which cannot be delayed. And—

The task is one for *all*—state, national, international—but it *must* be co-ordinated.

The time is *now*, and it must not be wasted.

● That's the kind of thinking which emerged, crystallized by reports on the International North Pacific Fisheries Commission meeting which was held a few days earlier in Vancouver, B. C., and on which two United States commissioners — Milton E. Brooding and Edward W. Allen — reported. Roger T. Hager, a Canadian commissioner, also attended the Ojai meeting and contributed significantly to the discussion.

Speaking more specifically from the scientific point of view were Dr. William F. Royce, director, and Dr. Donald E. Bevan of University of Washington Fisheries Research Institute.

Dr. Royce outlined the FRI's recent observations bearing on the Bristol Bay resource, and the outlook there for 1961; while Dr. Bevan, who returned only a short time before from 15 months studying fisheries in the U.S.S.R., reported on his observations.

● After the speeches and the question-and-answer discussions you could put your finger on a pulse of opinion which was indicative of industry conclusions. The consensus could be condensed thus:

> *Although control of Alaska's fishery resources has passed to the state, the United States still has a responsibility to support research in Alaska, as well as in all Pacific states. . . . Research on the high seas is primarily a Federal obligation. . . . Co-ordination of an expanded fishery research enterprise should be on a continental basis. . . . The obvious need, and the urgency, requires a realistic review of the financial support required for protection of the national interest in the fishery resources of the North Pacific Ocean.*

● Aubin Barthold, president of the Association of Pacific Fisheries, and re-elected at Ojai, pointed out that the association, through its founding and fostering of the Fisheries Research Institute, had raised before the world a standard of industry responsibility and support of science.

He emphasized further that the association today represents all aspects of the American salmon industry in all its activities, save only that of union negotiations.

All officers of the association were re-elected. Beside Mr. Barthold, they are T. F. Sandoz, S. M. Rosenberg and S. G. Tarrant, respectively first, second and third vice presidents; and Herald O'Neill, executive secretary.

John Borseth, manager of Western Fisheries Co., was added to the board of trustees. Retiring trustees re-elected were: Charles D. Alhadeff, A. W. Brindle, William Calvert, John N. Plancich and Mr. Rosenberg.

Hold-over members are: Mr. Barthold, Nick Bez, J. E. Brennan, H. B. Friele, Mark Jensen, Leo T. Kreielsheimer, J. J. Lind, Sam Rubinstein, Mr. Sandoz, V. F. Sutter, Mr. Tarrant, and Frank Wright Jr.

● There was recreation also. Two days of golf preceded the business meeting, and parties for all-hands were given on successive nights: Nov. 16 by Seattle Marine & Fishing Supply Co., Tubbs Cordage Co., and Nordby Supply Co.; Nov. 17 by Pacific Marine Supply Co. and Plymouth Cordage Co.; and the climactic affair Nov. 18 by Alaska Steamship Co., American Can Co. and Continental Can Co. Corsages for the ladies were provided by The Linen Thread Co.

● *Miller Freeman Challenge Cup*, traditional trophy of the Association Tournament, in its 28th playing, was won by Roger T. Hager of the New England Fish Co.

Cres Hale Memorial Cup was won by John Lauc of the P. E. Harris Co.

Jack Horner Trophy was won by Bob Welsh of the Bellingham Canning Co.

Prize winners in the tournament included: Homer Kyros, Sam Rubinstein, Jack Hanover, Cliff Irvine, Robert Thrall, Robert Graham, Mel Halgren, John Borseth,

S. M. Rosenberg, Harold Daubenspeck, William Lilly, Don Gerber, John Plancich, Donald V. Cawley, Walter Latham, William Angus, Ward Turnbull, Richard Finn,

J. Colmar, Budge Sargent, Harold Olsen, M. G. Grabowsky, A. W. Brindle, Don Cooper, Walter Meredith, Harold Brindle.

Convention prizes were won by: Warner Leonardo, J. F. Brennan, J. D. Cooper, Clifton D. Day, Bob Welsh, John N. Plancich, S. G. Tarrent, T. F. Sandoz,

F. J. Dowling, August Buschmann, Howard Johnson, Edward W. Allen, Richard Taylor, W. R. Lee, Ernie Person, Robert Beaupre and Clair Kidd.

● Donors of the prizes included: Tubbs Cordage Co., Nordby Supply Co., Samson Cordage Corp., Pacific Northern Airlines, The Linen Thread Co., D. K. MacDonald & Co.,

The Fish Net & Twine Co., National Canners Association, Association of Pacific Fisheries, North Pacific Seafoods, National Bank of Commerce, Bank of California,

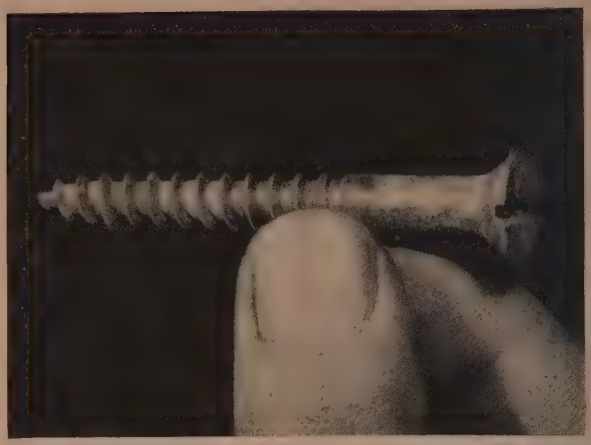
Serve U Meats, Container Corporation of America, Seattle Marine & Fishing Supply Co., Seattle First National Bank.

Everdur fastenings help keep workboats working

A lay-up of one day would be costly—especially during in-season. That's why boat owners and skippers rely on fastenings of Anaconda's copper-silicon alloy, Everdur,® to keep their boats at sea with a minimum of maintenance.

Everdur fastenings resist the corrosive effects of sea water and salt air. They have the strength and toughness to take the strains of pounding seas—the weaving and working of the hull. Everdur bolts, strapping, and fittings resist fatigue... resist sudden and repeated high stresses encountered at sea, season after season.

So if you are buying a boat, repairing, or remodeling—insist on Everdur in fastenings and fittings. Anaconda does not fabricate fastenings or fittings, but supplies Everdur in proper mill form to manufacturers of marine fastenings, hardware, and equipment. For a 16-page buyers guide, which includes a listing of these manufacturers, write: Anaconda American Brass Company, Waterbury 20, Conn. District Sales Offices: Los Angeles, California, at 14900 Garfield Avenue, Paramount—Oakland 12, California, at 360 22nd Street — Seattle 1, Washington, at 1311 Tower Building. 6095FF



This Everdur screw was removed from planking for inspection during a routine overhaul of a 20-year-old boat. The head, slot, and threads show no damage from either stress or corrosion—as good as new after two decades of service.

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EVERDUR FOR FASTENINGS AND FITTINGS
TOBIN BRONZE® AND TEMPALOY® PROPELLER SHAFTING
MARINE COPPER, BRASS, AND BRONZE

For Top Performance and Economy

Wise Pacific Coast Fishermen Choose

CUTLESS SOFT RUBBER WATER LUBRICATED BEARINGS

CUTLESS BEARINGS IMPROVE THE PERFORMANCE OF ANY VESSEL!

If you fish for a living you know the importance of dependable propeller shaft bearings. The kind that gives years of trouble-free, QUIET operation. The kind that saves shafts and keeps boat out of drydock. That kind is CUTLESS—the soft rubber, water lubricated bearing—the bearing fishermen depend on to keep them fishing.

Buy them from your favorite Marine Supply House or Ship Repair Yard when you haul out. Large west coast stocks, popular sizes. Factory stock to 11½-inch shaft size available overnight by air.

Conversion of 150' clipper SUN EUROPA into giant new tuna seiner involved complete hull rebuild at Fellows & Stewart, and use of Goodrich Cutless stern tube bearings.

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Engineers and National Distributors

B.F.Goodrich *Cutless* BEARINGS

PROPELLER SHAFT

FOOD FISH MARKETING

Section of PACIFIC FISHERMAN —

News and Views of National Trade in Fish and Shellfish

December 1960

SALMON MARKET—Picked Clean, Like the Turkey on Nov. 25th

● The day before Thanksgiving *PF* asked a prominent salmon sales manager: "How's the canned salmon market look?"

"Like your turkey will day-after-tomorrow—well picked over and with little left is the way of something to eat. So much for supplies.

"Now as to movement: "We're finding surprises right along in the sales rate in spite of high prices. With plenty of Red talls on hand as compared with recent years, we anticipated they would move slowly, but that hasn't been the case.

"For example: a buyer of real importance tells us that his sales of Red talls are up 35% over even date in 1959.

"So then we do a bit of checking in our shop, and we came-up with just about the same figure.

"We carry our inquiry to another sales agency, and it reports similar experience.

"Now you may say that in 1959 Reds were so scarce that there weren't any to sell, and that it's easy to be 35% above nothing; but that just isn't the case. At this time last year we still had plenty of Red talls to sell, and were hustling business.

● "Funny thing also about complaints. We get 'em, sure; but they aren't on prices. The complaints come from scarcity of Pinks and Chums; and want to know if we can't dig up a few more for a deserving old customer. We'd like to, but we can't—not until next season.

"Now I don't say the consumer won't complain at $28 Pinks—after that figure has been translated into a retail price mark. To date the housewife hasn't come face-to-face with the resulting retail price tag, and when she does you can't expect her to like it. Maybe she'll not buy Pinks as often; maybe she'll say: 'At a price like that I might as well buy Reds'.

"On the basis of our experience in the past few years, that's what her reaction can be expected to be.

"That's why we honestly believe that the supply of Red talls, considerable though it be, will not prove more than adequate to meet the consumer demand over the next nine months.

"Yes, I said *nine*. December through August is nine. While Red talls will be canned to some extent before July 1, they will be a long way from market and it isn't realistic to count on any new-pack Reds reaching the consuming markets before late August, 1961.

"That's the way I see it. Oh, don't mention it. Glad to talk salmon selling anytime—

"Oh, yes; I meant to ask—You don't know where I can pick up a few Pink talls, do you?"

Rayola Merges With Koulouris-Casaretto

Rayola Co. and Koulouris and Casaretto Co., two leading fish and seafood wholesalers of Southern California, have announced a merger of their businesses. Ray Lemoi, Rayola Co. head, has moved to the Koulouris and Casaretto offices at 656 S. Alameda St., Los Angeles.

Among the lines brought into the merged firm by Rayola are Eureka Fisheries, Eureka, Calif.; Washington Fish & Oyster, Seattle; Bornstein Sea Foods, Bellingham; A Paladini, San Francisco and Fort Bragg; Everett Fish Co., Everett, Washington; San Ken Teen shrimps, Newport Beach, Calif.; Iceland Products, Reykjavik; and a wide line of fresh fish and seafoods.

Both Mr. Lemoi and Aldo Casaretto, head of Koulouris & Casaretto, are well-known figures in the industry. Mr. Casaretto is a past president of the National Fisheries Institute. Mr. Lemoi is past president and current director of the California Fisheries Council, and past president of Southern California Fisheries Assn.

California Imports of Frozen Tuna

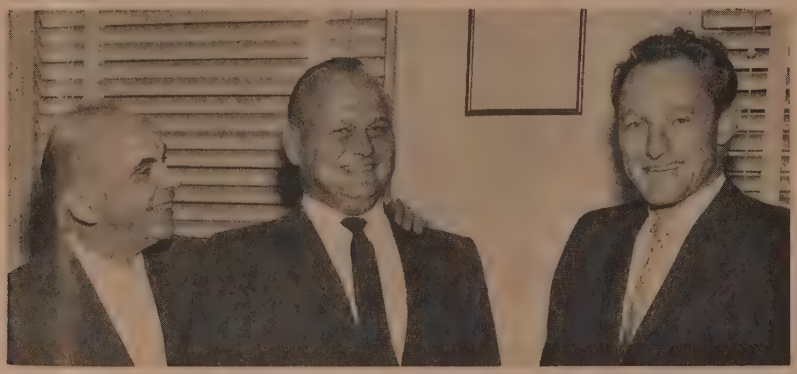
Cumulative data in tons for 1960 through November 12, and for other years to the nearest comparable date. Data from U. S. Market News Service.

	Albacore	Skipjack	Yellowfin	Unclassified	Total
San Francisco	1,691	260	8,540	417	10,908
San Pedro	11,279	8,641	23,650	126	43,696
San Diego	2,627	747	1,195	17	4,586
Total to Nov. 12	15,597	9,648	33,385	560	59,190
1959	11,921	9,844	42,345	4,404	68,514
1958	12,418	9,201	41,676	350	63,645

Seattle Market

Market prices currently quoted at presstime by Pacific Northwest brokers and cannery sales department, cases of 48 tins, unless otherwise specified, good quality, as reported by the U. S. Bureau of Commercial Fisheries Market News Service.

Items and Packages	Per Case
Puget Sound	
Sockeye, halves	$ -25
Sockeye, quarters	-15
Alaska	
Red, talls	35 -37
Red, halves	23 -25
Pink, talls	27 -28
Pink, halves	15 -16
Pink, 4-lbs. (12)	(unavailable)
Med. Red, talls	31 -32
Med. Red, halves	19 -20
Med. Red, quarters	13 -14.00
Chum, summer, tall	24 -25
Chum, summer, halves	13 -14
Chum, fall, 4-lbs. (12	-25
Chinook, talls	-32
Columbia River	
Blueback, halves	26 -27
Blueback, quarters	14.50-15
Chinook, fancy, halves	26 -27
Chinook, fancy, quarters	14.75-15
Chinook, choice, halves	18.00-20.00
Chinook, choice, quarters	11.50-13.00
Silver, halves	-19.00
Silver, quarters	13.25-13.50
Tuna, Northwest Pack—	
Albacore, fcy., 7 oz.	-12.00
Yellowfin, s/pack, 7 oz.	-10.50
Yellowfin, chunk, 6½ oz.	9.50- 9.85
Tuna, Columbia River Pack	
Albacore, fcy, 7 oz.	14.85-15.25
Albacore, fcy., 3½ oz.	8.85- 9.15
Albacore, chunk, 6½ oz.	10.50-13.25
Albacore, chunk, 3 oz.	6.50- 8
Lightmeat, fcy., 7 oz.	14.25
Lightmeat, fcy., 3½ oz.	8.55
Lightmeat, chunk, 6½ oz.	11.00
Canned Shrimp—	
Northwest: 4½ oz. wet pack	- 7.25
Alaska: Tiny (over 17 per oz.)	- 7.25
Small (10-17 per oz.)	- 8
Medium (6-9 per oz.)	-10
Canned Crab	
Dungeness, 24, 6½ oz.	13 -
Dungeness, 24, 3½ oz.	- 8.25
King, fcy., 7½ oz.	-32
King, std., 24, 6½ oz.	-15
King, std., 24, 7½ oz.	-16



R. M. Sloan Co. principals jubilate over the adherence as vice president of Joe Sulentor, center, formerly head of Western Fish Co. On the left is B. C. Mitchell, vice president, and on the right R. M. Sloan, head of the company.

Joe Sulentor Joins R. M. Sloan Co., L.A.

An important change took place in Southern California's wholesale fresh and frozen seafood merchandising scene when Joe Sulentor, former head of Western Fish Co., joined the R. M. Sloan Co. of Los Angeles.

Mr. Sulentor, a 25-year veteran in the business, is currently president of the Southern California Fisheries Association, a post he had held twice, and is one of the best-known figures in the fish fraternity. With his move to the Sloan organization, Western Fish Co. is dissolved.

R. M. Sloan Co., headed by Robert M. Sloan, also a prominent figure in fish circles, has expanded its field of frozen food wholesaling. It comprises an institutional-manufacturing department under vice-president R. C. Mitchell, as well as a seafood department and a retail department. Among the brands handled are: Prime-Froz'n fruits and vegetables; Ore-Ida potato products; Van de Kamp's new frozen entree line, to be introduced before the end of the year; Rich's whip topping and Armanino's frozen chives. Seafood lines are Ell Vee Dee scallops; Kirkpatrick eastern oysters; Caribou eastern fillets; Chauvin shrimp; Queen Charlotte crabs and crabmeat; Blue Diamond shrimp. The firm also supplies fresh and frozen bulk whole dressed fish, fillets and seafoods from Washington, Oregon and British Columbia as well as California.

The Sloan organization, now in its 14th year, now has a staff of 20 and moves a volume of over 30,000,000 lbs. of merchandise annually.

1960 Fish Week Tops Los Angeles' Record

Southern California Fisheries Association members in November received good news about their concerted promotion in the October 1960 Fish and Seafood Week.

Hugh Roberts, advertising counsel for the association, reported that 1960 Fish and Seafood Week, lsat October, was a bigger success than ever in publication space and radio-TV time devoted to fish and seafoods. He said that year after year as Fish and Seafood Week is repeated, acceptance becomes more general and the publicity job easier and more effective.

There was some discussion of changing the timing of Fish and Seafood Week to the first week of Lent, when, some members said, the interest in fish is higher and sustained for a longer time.

Tenderized Tuna Prices For Export Established

Export prices for "tenderized tuna" in the four styles of packing developed by Nippon Reizo K.K., originator of the new food product, were announced in Japan in November.

Price for plain cans for export—the domestic item is packed in lithographed tins—was set at 27 yen per tin for quarters and 45 yen per tin for halves. These prices are ex-warehouse, shipping port in cases of 48. With the yen at .28¢, these prices, respectively, are 7.56¢ and 12.6¢ *per tin.*

Prices for all four styles—in curry sauce, in soy sauce, in stew and in tomato sauce—are the same.

(Samples of the product received by *Pacific Fisherman* have shown the tuna in fact to be much more tender than the usual standard pack. The fish is in "chunk" style with a considerable amount of sauce.)

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NORTHWEST TUNA
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SALMON
"Packed with the Wiggle in its tail"
NEW ENGLAND FISH CO.
Seattle, Wash.
Since 1868
Producers ★ Packers ★ Distributors
Canned ★ Fresh ★ Frozen ★ Seafoods

Robert E. Graham, new chairman of Canned Salmon Institute, industry-wide promotion enterprise.

Robert Graham Heads Canned Salmon Institute

Robert E. Graham, 42, vice-president and sales manager of Pacific American Fisheries, Inc., Bellingham, Wash., has been named chairman of the Canned Salmon Institute, which promotes the sale of canned salmon nationally through educational services, consumer advertising, and publicity.

He succeeds Leo Kreielsheimer, president of Kadiak Fisheries, Seattle, as Institute chairman.

Mr. Graham is vice-president of three firms associated with Pacific American Fisheries — Deming and Gould, Bellingham Warehouse Company and Port Ashton Packing Co.

A Seattle native, Graham was educated in Seattle grade and high schools and attended the University of Washington for two years before World War II.

During the war, Graham rose from a private to major, and served 44 months overseas in Australia, New Guinea and the Philippines. Upon his return to the United States, he was assigned to the Louisiana military district, and remained in that area to complete his education at Tulane University in 1947.

He was vice-president and sales manager of the P. E. Harris Company for several years before joining Pacific American Fisheries in 1960.

Towns and Haywood Unite in Vancouver

Two figures prominent in British Columbia's fishing industry have joined forces with the formation of a partnership representing E. A. Towns, president of E. A. Towns, Ltd., and Don McKay Haywood, for many years associated with B. C. Packers, Ltd. in Vancouver, overseas and in the United States.

E. A. Towns, Ltd., was established in 1938 and has been active in the import and export business, specializing in fish nets and other fishermen's supplies.

Mr. Haywood's experience includes market and fishing research in South America, Australia, the Near East, South Pacific and Ceylon. In Australia he investigated the tuna fishing potential for the Rockefeller enterprises and in the Near East he was consultant for the development of fisheries under the Colombo plan for the Canadian government.

Until recently he has been living in Los Angeles where he organized B. C. Packers' marketing and fresh and frozen fish imports, being in charge of the Southern California operations of Rupert Fish Co. and Certi-Fresh Foods, subsidiaries of B. C. Packers, Ltd.

Southern California Domestic Tuna Deliveries

Cumulative totals for 1960 through Nov. 12, in tons, as reported by U. S. Market News Service

	Albacore	Bluefin	Skipjack	Yellowfin	Bonito, etc.	Total
Clippers and Albacore Fleet	15,304	...	18,096	21,147	...	54,547
Purse Seiners	104	5,364	6,244	61,127	143	72,982
Total 1960 through Nov. 12	15,408	5,364	24,340	82,274	143	127,529
Total 1959	14,645	7,233	57,188	48,264	938	128,268
Total 1958	12,606	15,160	55,930	58,165	2,161	144,022

Southern California Receipts

	Albacore	Bluefin	Skipjack	Yellowfin	Bonito, etc.	Total
San Pedro	24,498	5,175	23,611	94,351	143	147,778
San Diego	4,333	332	10,117	12,768	...	27,550
Total 1960 through Nov. 12	28,831	15,507	33,728	107,119	143	175,328
Total 1959	24,403	7,456	67,045	86,336	937	186,177
Total 1958	21,683	15,505	64,566	93,235	2,166	197,155

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TWX: NY 1-625 • Cables: FISHSTIX NEWYORK

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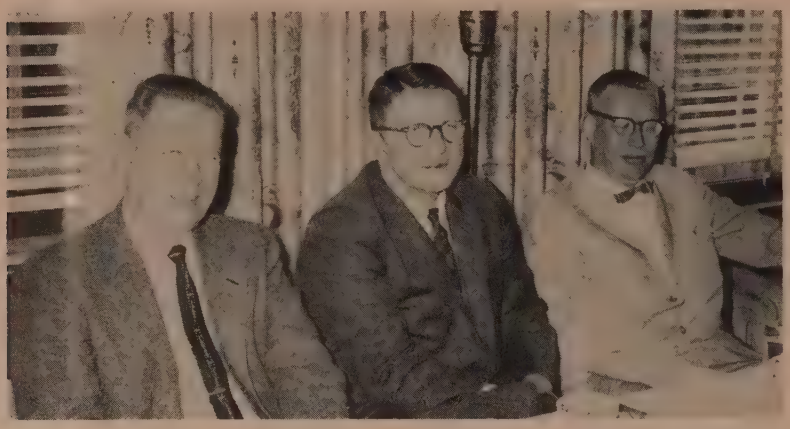

Robert F. Morgan, 1960 president of the Northwest Salmon Canners Association, center; with **Harold Daubenspeck,** secretary, on the left; and on the right **John Wedin,** manager, Northwest Trawlers Association.

$1 Million Sought in Shrimp Case

Relying basically on the same contentions as the Federal Trade Commission in its complaint charging anti-trust law violations in the field of shrimp peeling machines, a group of 10 Pacific Coast shrimp packers this autumn filed a civil suit against the same defendants, seeking treble damages for alleged injury sustained, the total sought being $1,121,076.

Companies and individuals bringing the court action were Crown Packers, Inc.; Pacific Shrimp, Inc.; Kaakinen Fish Co.; Halibut Producers Cooperative; Seward Seafoods, Inc.; Seaside Clam Co.; Harbor Seafoods of Wrangell; William F. Smith Company; Harbor Seafoods, Inc.; Alaska Marine Foods, Inc.

Named as defendants are partners in The Peelers Company and Grand Caillou Packing Co., Inc., both of Louisiana. Service of the complaint was reported had on Stephen Poole, Aberdeen, Wash., said to be the Pacific Northwest agent of The Peelers Company.

The plaintiffs, contending that it is essential for them to use machines patented and controlled by the defendants to engage in Pacific shrimp packing, charge that the defendants have: (1) monopolize the manufacture and distribution of such machines; (2) have tended unreasonably to restrict competition in the manufacture and distribution of such machines; (3) have operated in such a way as to restrain interstate trade in processed shrimp.

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B. E. Gilman Heads N. W. Fisheries Association

B. E. Gilman, Pacific Coast manager of Vita Food Products, Inc., was elected president of the Northwest Fisheries Association at its annual meeting Nov. 9. He succeeds Stephen Chase of Everett Fish Co.

Other officers elected were: vice president, Douglas W. Hager, New England Fish Co.; secretary, J. G. Blasingame, Washington Fish & Oyster Co.; treasurer, Don Johnston, Seattle Sea Foods, Inc.

Trustees elected for three-year terms were: John W. McCallum, McCallum-Legaz Fish Co.; Knut Thompson, Petersburg, Alaska; Leif Ericksen.

Charles R. Pollock continues as executive secretary, a position he has held since the association was formed.

TWO GREAT BRAND NAMES IN FROZEN FRESH SEAFOODS

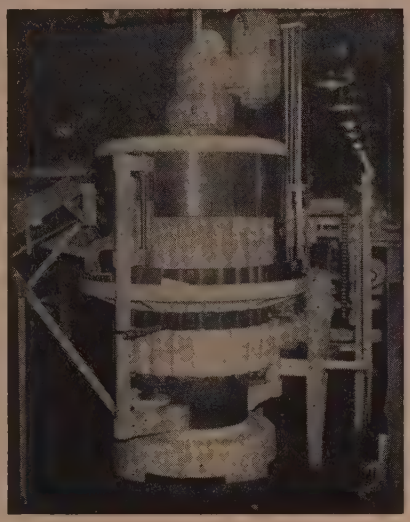
SAN JUAN

Ship Ahoy

FRESHEST FISH IN THE FREEZER
More than 37 Delightful Frozen Seafoods in Both Brands
NOW VACUUM-PACKED STEAKS & FILLETS
IN SAN JUAN'S OWN FLAVOR-SAVOR RETAIL-SIZE PACKAGES

SAN JUAN FISHING & PACKING CO.
PIER 31—SEATTLE, WASH.

The PAK-FORMER



Leading tuna canners are now using the PAK-FORMER for their Chunk and Grated Style Packs. A variable speed drive permits filling speed adjustments of between 140 and 250 cans per minute. Available to the industry under similar terms as our PAK-SHAPER.

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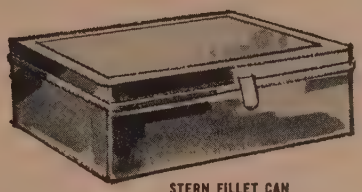

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1 GALLON CLAM AND OYSTER

This year marks the 150th Anniversary of the Metal Can Industry and the 59th year in which Stern has been producing cans to bring greater efficiency and economy to business.

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Model 13A

Puretic Gillnet Power Block, smooth—powerful—light in weight. Hydraulic driven. Davit mounted. Proven performance in Bristol Bay and Cook Inlet.

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Marco Hydraulic "Hi-Liner" Gillnet Roller • Castings of salt water resistance aluminum • Rugged construction • Lever control for free wheeling or power operation. Proven performance in Bristol Bay.

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New Cerlist Diesel Engine Shown at Seattle Boat Show

A new diesel engine made its first Northwest appearance at the recent Seattle Boat Show. The new engine, Cerlist, is regarded by many as something new for gillnetters and seine skiffs.

Light in weight and of heavy duty construction the Cerlist develops 85 HP at 3000 rpm. An engine is currently installed in an 18' x 9' Alfab tunnel stern aluminum skiff and swings a 25 x 19 Federal wheel through a 3 to 1 reduction gear, showing excellent speed and easy handling.

The Cerlist has a number of features which are interesting to fishermen and while it is of Australian design the builders have incorporated American standard parts. For example the engine has a Roots blower, Perfect Circle piston rings, Federal Mogul bearings and a Bosch fuel system.

The engine operates on a 12-volt Autolite electric system both on the starter and generator. Particular attention has been given to make the engine adaptable to both Capitol and Snow-Nabstedt gears, and for cooling both radiator and heat-exchangers can be used.

Fishermen who have used these engines report that under continuous operation at 2600 rpm the engine has used an average of less than 2.5 gallons per hour. For larger boats the Cerlist engine has been used as an auxiliary with a 30 KW electric used as an auxiliary with a 3 KW electric plant to operate the many items of gear aboard requiring power.

Chain Gear has new T-D "Top Power Take-off"

Chain Gear, Incorporated, Seattle, has introduced to the Pacific Northwest marine industry a new power takeoff mechanism utilizing the reverse-reduction gear as power source rather than the forward end of the engine. The new development, termed by Twin Disc Clutch Co. and the Seattle distribution firm, a "Top Power Take-off", consists of an adaptation opening the top of the gearbox and taking power from there for mechanical use aboard ship, such as pumps, winches, etc.

The development allows two separate sources for power takeoff, since the forward end of the engine is still available for takeoff. However, its main advantage, reportedly, is that the new power takeoff method derives power from the "power end" of the engine, where there is more room for the takeoff gear and where it is closer to after deck winches, etc.

Most particularly, the new takeoff method will not require lengthening the engine area. Front of engine can be closer to bulkhead, and space already used for reduction gear can be used for the takeoff. This either permits use of a longer shaft and longer fish-carrying area, or longer foc'sle area by moving forward bulkhead back. One sales engineer for Chain Gear reports that the new unit saves as much as 30 inches in overall machinery length.

N C Marine Appointed Chrysler North Pacific "Engine Center"

N C Marine, Seattle, a division of Northern Commercial Company, has been appointed "Engine Center" for Pacific Northwest and Alaska for both Chrysler marine and industrial engines, it was announced by Jack Lapp, district manager for the Chrysler Marine and Industrial Engine Division.

N C Marine has been a Chrysler dealer for six years, serving Western Washington and Alaska. In addition to heading up sales and service of Chrysler marine and industrial engines for this area, N C Marine will also be the engine center for Perkins diesel engines, distributed by Chrysler and available in the 40 to 105 horsepower range.

Commenting on the appointment, N C Marine manager Paul Salmon and Chrysler products sales manager Luke Zankich emphasized that N C Marine's experienced staff and complete parts and engine service provide facilities for all Chrysler marine and industrial engine users. The firm recently expanded dockside facilities on Lake Union at 2500 Westlake Avenue North. Parts and service are also available in Alaska at the Northern Commercial Company Machinery Division stores in Ketchikan, Juneau and Anchorage.

Poor Puget Sound Chum Season Closed Early

All commercial salmon fishing was closed in Puget Sound November 17 by Milo Moore, Director of the Washington State Department of Fisheries.

Early closure of the season (originally scheduled to run until November 30) was due to poor showings of Chum salmon, a decline in chum runs appearing general all along the Pacific Coast.

The closure was designed to give remaining Chum salmon a chance to reach their spawning grounds, with hopes that dwindling catches of Chums, at their lowest ebb in 1956 and 1957, will continue an increase indicated by bigger landings in 1958 and 1959.

In the Grays and Willapa harbor areas, where Chum runs appear to be normal, the season, will remain open until November 30.

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You'll warm to industrial refrigeration economically designed and manufactured by Kohlenberger. Here's *complete* service covering every aspect of your refrigeration needs...from equipment manufacture and system design to plant layout and field erection. Since 1922 Kohlenberger Engineering Corporation has built its reputation on the skill of its engineers... the dependability of its equipment. We'd like to show you how you'll benefit. Write for literature or phone LAmbert 5-3521.

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2. KE Condenser: Heavy duty industrial evaporative condenser. 10-200 tons.

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4. Unit Cooler: Industrial floor-type unit cooler for ammonia, freon and brine refrigerants. 5-30 tons.

Franchises available for qualified industrial refrigeration contractors. Contact C. R. Kohlenberger, president.

KOHLENBERGER ENGINEERING CORPORATION

1600 COMMONWEALTH AVE., P.O. BOX 432, FULLERTON, CALIFORNIA

American Marine Paint Co.'s president, William A. Shevlin, right in the photo, recently announced appointment of Arthur Clay as new sales representative in the Northern California marine field, working out of the company's home office in San Francisco. He will specialize in marine dealer and boat yard contacts.

Felando Named Manager Of Tunaboat Association

August Felando, formerly of San Pedro, an attorney specializing in admiralty law, was named manager of the American Tunaboat Association last month. He succeeds Earl Clagett, who resigned for reasons of health.

In taking over his new duties, Mr. Felando indicated that the association would undertake to reorient its activities and become more a complete service organization for tuna vessel owners. He pointed out that the owners of tuna vessels, concerned principally with the immediate problems of catching and transporting fish, need a strong, unified organization to represent them in dealing with such matters as:

Relations with city and county tax authorities;

Impartial advice on problems connected with conversions of tuna clippers to seiners;

Price comparisons and information on netting, equipment and supplies for tuna vessels;

Relations with the Internal Revenue Service on matters pertaining to depreciation and salvage value in connection with income tax reports;

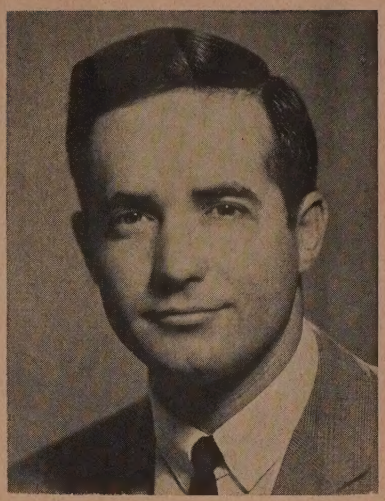
Labor relations, especially negotiations with fishermen's unions;

Relations with canners, especially with relation to prices of fish;

Relations with foreign governments in whose waters American tuna vessels operate, etc.

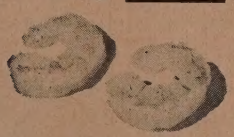
Tuna fishing, Mr. Felando pointed out, is becoming every day a more complicated business, and vessel owners need an organization devoted entirely to studying and solving their problems. The American Tunaboat Association, he said, has the background, prestige and experience to act effectively to make tuna fishing a more profitable business.

George Alameda is president of the tuna boat owners' group; Edward P. Silva is vice-president. The association's office is located in San Diego,



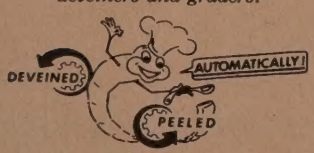
August Felando, new manager of the American Tunaboat Association.

Isn't there more profit in selling shrimp...



than there is in selling shells?

The Peelers Co. specializes in automatic shrimp peelers, deveiners and graders.



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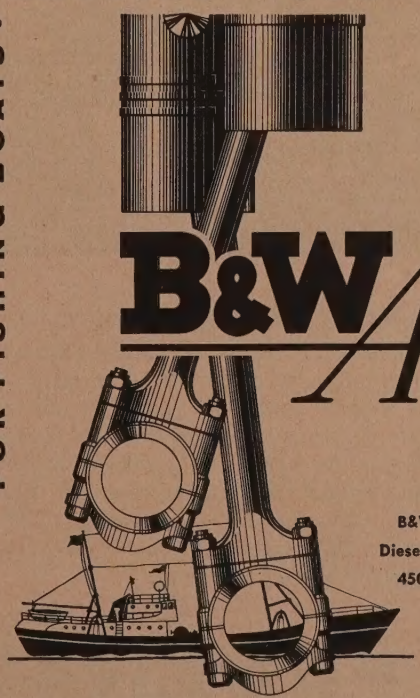

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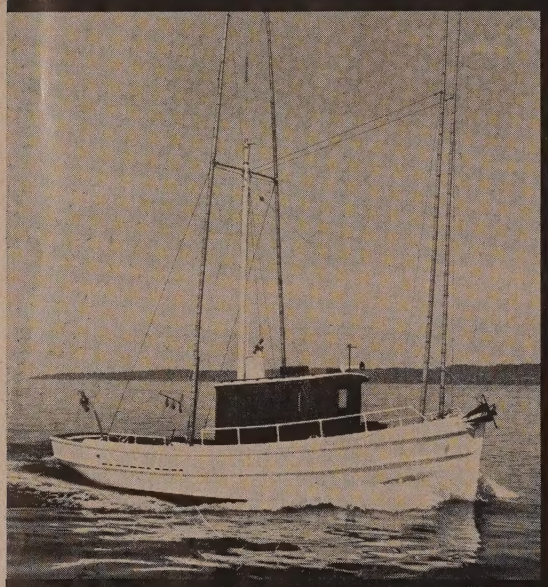
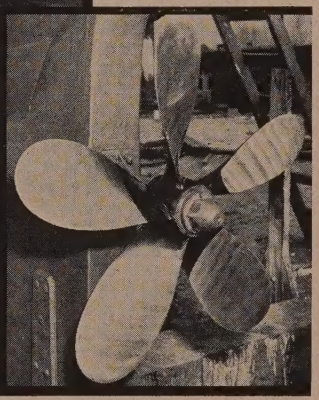


Designed by H. C. Hanson Seattle. The 37' "Furies" was built in British Colonial Hong Kong for William C. Thompson of Portland, Oregon. She is a very unusual "troller" of teak and other exotic woods with design and efficiency innovations to be found in every detail of her construction.

FOR THIS

Unusual

Troller...



015

"Furies" sports a 50 HP four-cylinder, four-cycle German engine . . . unusually low horsepower rating for modern trollers. Yet with her Federal Vibra-Free Ni-Bral prop, she logs 8.0 knots at 1,375 rpm. Federal Vibra-Free props are famous for eliminating vibration and stern rumble, as well as providing added speed at normal rpm, and unusual fuel economy. Add the unbeatable durability of Ni-Bral, and you'll see why skippers everywhere rely on Federal.

FEDERAL PROPELLERS

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It pays in more fish, less labor, paint and fuel to use a high quality INTERNATIONAL Bottom Paint. In the first place, the bottom stays clean so you are ready to catch fish when the fish are there. In the second place, you need to paint less frequently thus saving labor and paint. Then, because the bottom is clean, you require less fuel. There is a moderately priced INTERNATIONAL Bottom Paint for every type of vessel. Send for color cards and price lists.

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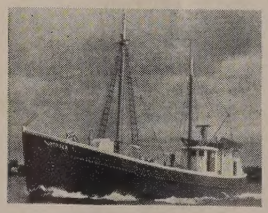
17 POWER-FULL reasons why WAUKESHA DIESELS bring in the FISH!

FISHERIES PATROL

WEST COAST

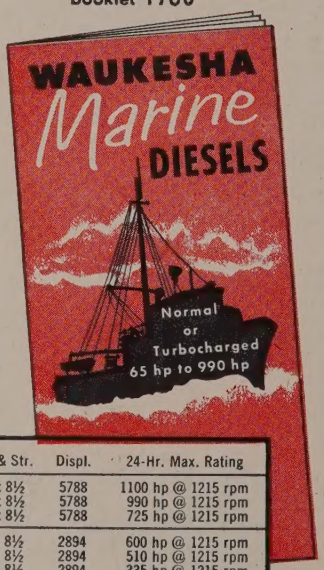
CANADA



NORTH ATLANTIC

GULF COAST

White for Booklet 1760



Engine	Type	Cyls.	Bore & Str.	Displ.	24-Hr. Max. Rating
RELIANCE	Turbo and intercooler	12	8½ x 8½	5788	1100 hp @ 1215 rpm
	Turbo—non-intercooled	12	8½ x 8½	5788	990 hp @ 1215 rpm
	Normally aspirated	12	8½ x 8½	5788	725 hp @ 1215 rpm
DEFENDER	Turbo and intercooler	6	8½ x 8½	2894	600 hp @ 1215 rpm
	Turbo—non-intercooled	6	8½ x 8½	2894	510 hp @ 1215 rpm
	Normally aspirated	6	8½ x 8½	2894	335 hp @ 1215 rpm
WANDERER	Turbo—non-intercooled	6	7 x 8¼	1905	315 hp @ 1215 rpm
	Normally aspirated	6	7 x 8¼	1905	240 hp @ 1215 rpm
RESOLUTE	Turbo—non-intercooled	6	6¼ x 6½	1197	290 hp @ 1600 rpm
	Normally aspirated	6	6¼ x 6½	1197	195 hp @ 1600 rpm
VIGILANT	Turbo—non-intercooled	6	5¼ x 6	779	195 hp @ 1800 rpm
	Normally aspirated	6	5¼ x 6	779	150 hp @ 1800 rpm
CUTWATER	Turbo—non-intercooled	6	4¼ x 5	426	120 hp @ 2000 rpm
	Normally aspirated	6	4¼ x 5	426	100 hp @ 2000 rpm
NAVIGATOR	Turbo—non-intercooled	6	4 x 4	302	85 hp @ 2000 rpm
	Normally aspirated	6	4 x 4	302	65 hp @ 2000 rpm

CRANKCASES Waukesha special alloy cast iron. Heavy main bearing bridges and thick oil pan mounting flanges and end walls—designed for maximum rigidity.

CYLINDER HEADS Valve-in-head high compression type. Clean-burning, controlled turbulence, patented spherical combustion chambers. Injection nozzles and combustion chambers removable from the outside.

CYLINDERS Removable wet sleeves of Waukesha special heat-resistant alloy iron in all engines except Cutwater and Navigator. Cutwater and Navigator have dry sleeves.

PISTONS Heavy-duty aluminum alloy with wedge-type compression rings. Oil control rings are parallel-side type. Pistons ribbed for extra strength; designed for even heat expansion.

CONNECTING RODS Forged steel, rifle-drilled for pressure oiling to pin bearings. Both ends precision-machined on parallel centers to Waukesha Quality Control standards. Pistons and pins assembled in matched sets.

CRANKSHAFTS Forged steel shafts are machined and precision ground in Waukesha's shops to rigid Quality Control standards. All crankshafts carefully balanced, with large diameter journals, for smooth power flow through entire power train to shaft and propeller.

MAIN and ROD BEARINGS Precision-type replaceable steel-backed bearing shells held by deep-section caps. Unusually large total bearing areas.

EXHAUST MANIFOLDS Water-cooled exhaust manifolds on all models.

GOVERNORS Automatically lubricated, mounted on injection pumps in all models, except the Defender and Reliance which use governors driven from the engine gear train.

FUEL SYSTEMS All Waukesha Marine Diesels equipped with Bosch injection pumps (except the Navigator which has the Roosa-Master pump), drawn steel injection lines and pintle-type injection nozzles. Combustion chamber assemblies removable from the outside.

LUBRICATING SYSTEMS Positive pressure gear-driven lubricating pumps and scavenger pumps. Pressure relief valves. Oil filters and coolers.

COOLING SYSTEMS Centrifugal pump cooling. Directed circulation, and coolant passage design eliminate hot spots and promote even heat control. Expansion tanks for all models. Engines engineered for either heat exchanger or keel cooling.

STARTING SYSTEMS Electric systems with starting motors, generators and regulators, available for all models. Air or hydraulic starting available.

POWER TAKE-OFF Front end power take-off for driving hydraulic pumps, auxiliary generators or air compressors, raw water and bilge pumps, winches and other marine accessories (except on Navigator Series).

REVERSE and REDUCTION GEARS Reverse and reduction gears in size and ratios to match all Waukesha marine engines and the service requirements.

CONTROLS and INSTRUMENTS Oil Pressure and water temperature gauges, starter switches, safety devices, instrument panels, and tachometer drives. Visible and audible alarms or facilities therefor, as specified.

OTHER ACCESSORIES and EQUIPMENT are available for special services.

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN / **New York • Tulsa • Los Angeles**
Factories: Waukesha, Wisconsin and Clinton, Iowa